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ABSTRACT

Intended for use as a practical guide by teachers of librarianship, information science, and archives administration, this guide includes exercises and explanations to assist in writing learning objectives in these areas. The examples presented relate to the various levels of training, and illustrate the diversity of topics in this subject area; however, the objectives indicated are not intended to be an exhaustive list of all potential objectives of a curriculum. The first part of the guide, which is designed to create an awareness of the importance of learning objectives in education, underlines the interdependence between objectives and the other components of instruction, and suggests a procedure for the precise formulation of objectives. The second part contains four worksheets, each of which is divided into eight or more sections. These worksheets provide definitions, explanations, exercises, and follow-up tests to help the user learn to write objectives. The worksheets are designed for use by students on their own or with the aid of a resource person, and may also be used for group learning. A 13-item glossary is included. A list of references is arranged under separate subject headings: (1) learning objectives--general works (18 titles); (2) learning objectives in librarianship, archives administration, and information science (44 titles); (3) documents consulted in designing the worksheets (34 titles); and (4) course planning (29 titles). A list of publications in the field of education and training concludes the guide. (SD)

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Guidelines for writing learning objectives in librarianship, information science and archives administration

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GUIDELINES FOR WRITING LEARNING OBJECTIVES IN LIBRARIANSHIP, INFORMATION SCIENCE AND ARCHIVES ADMINISTRATION

by

France Fontaine and Paulette Bernhard

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PREFACE

It is generally acknowledged that the best long-term investment for the development of appropriate information systems is to produce competent information specialists by providing theoretical and practical training. To this end, many countries, both developed and developing, are making determined efforts to set up the necessary institutions. Although facilities and teaching staff are the responsibility of the national authorities, international assistance is often called upon for the production of educational materials. In recent years, the need for training has frequently been expressed and a large number of documents on theoretical and practical training are available from Unesco in several languages (see list at the end of this volume). In order to make these documents easier to use it is worth while outlining the intentions behind them.

A very wide range of teaching aids is necessary for the theoretical and practical training of documentation specialists.

It was thought advisable to deal, as a matter of priority, with the requirements of those Member States which wished to make a global approach to the problem of training. Accordingly, the first guidelines to be produced are of a general nature and focus on topics such as curriculum development, policy-making and staffing forecasts.

This general documentation was supplemented by more specialized works intended for educational establishments and teachers. In this connection, there are two sorts of needs which must be catered for: teaching content, on the one hand, and teaching methods, on the other.

It is recognized that professional practices in archives administration in information science and in librarianship are developing very rapidly and that the number of new specializations which must in future be taught is increasing: management, marketing, new technology and on-line searching are but a few examples of fields in which documentation requirements are becoming a matter of urgency and call for priority treatment. In order to introduce these fields, this series offers, and will continue to offer, items on specialized topics concerning the training of information specialists.

Educational science as developed in higher education provides teachers, whether experienced or inexperienced, with tried and tested methods of considerably enhancing the effectiveness of their teaching: the definition of objectives, the design of evaluation methods, the choice of teaching methods, the use of different types of audio-visual and computer-based technology are all important aspects of education on which teachers require detailed information. This series also endeavours to respond to such needs as these.

Anyone involved in education is aware that teaching is a highly personalized activity the determining features of which are the educational environment, the students and the personality of the teacher. A curriculum or course in a particular subject is the result of a large number of interacting elements. The guidelines in this series therefore suggest angles of approach and make recommendations, but they do not endeavour to impose definite lines of action. For the same reason, the authors have been given general guidance as to the direction their work should take but they are not expected to be totally consistent, down to the last detail, with the other documents in the series. The reader will certainly appreciate that such a demand would be artificial and that an author requires an intellectual freedom that goes hand in hand with intellectual responsibility.

The only major element which is common to all the publications in this series is their emphasis on the harmonization of training.

This means that, as far as possible, the training of archivists, librarians and information specialists should be planned in a concerted way by each individual authority responsible. The theoretical reasons and the practical advantages of his approach have been studied and acknowledged in work carried out not only by Unesco but also by non-governmental organizations such as IFLA (International Federation of Library Associations and Institutions) and FID (International Federation for Documentation) and ICA (International Council on Archives).

This document was compiled by France Fontaine and Paulette Bernhard under an agreement between Unesco and the Centre for Teaching Advice of Montreal University. It is intended for the use of teachers of librarianship, information science and archives administration, and it includes practical exercises and explanations to help in the writing of learning objectives in these areas. Each practical exercise includes a short introduction which deals with a particular aspect of the question: the role of objectives, the use of objectives in teaching, difficulties to be resolved in defining and using objectives, and so forth.

The document is an adaptation of France Fontaine's Les objectifs d'apprentissage © 1977, Centre for Teaching Advice, Montreal University. The texts which precede the practical section have been amended. The examples given in the practical section have been completely restructured so as to relate them to the areas dealt with. The examples were selected by Paulette Bernhard, assistant professor at the School of Library and Information Sciences and France Fontaine, educational adviser to the Montreal Unviersity, Centre for Teaching Advice.

The document is primarily a practical guide. It cannot in any sense be a substitute for the works listed in the bibliography which deal in greater detail with the theoretical aspects of objectives.

The authors wish to thank Madeleine Sauvé, a grammarian at Montreal University, and the team of teachers at the School of Library and Information Sciences for their invaluable co-operation.

It is hoped that these guidelines will provide archivists, librarians and information specialists, as well as all those responsible for their theoretical and practical training, with new ideas for use in their teaching and in their professional activities.

The terms used in this publication and the way in which the material is presented should in no way be regarded as reflecting any particular opinion on the part of Unesco.

Any comments, suggestions for improvement or reports on experience acquired by other countries in implementing these guidelines are more than welcome. All correspondence should be sent to the Division of the General Information Programme, Unesco, 7 place de Fontenoy, 75700 PARIS, France.

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INTRODUCTION

The writing of objectives has been a concern in the world of education for a number of years and many volumes have been published on the use of objectives. However, there are very few works which dwell on the practical aspect of writing learning objectives.

The present volume is intended to make a contribution towards filling that gap by promoting, through practical exercises, the acquisition of skills in the writing of learning objectives. These exercises are based on a suggested procedure for specifying the objectives being pursued. The application of the various stages of the approach will facilitate the thinking required by the process of defining the objectives. Part I of the document will introduce the procedure and will show, by using short texts, how the objectives fit into the teaching process. Part II, which is the main part of this work, consists of four worksheets comprising a large number of practical exercises.

As this document is addressed to specialists in librarianship, information science and archives administration the practical examples are related to that particular subject area. This is intended to make it easier to understand the process of defining objectives and to give the reader an opportunity to draw on some of the examples in writing his[1] own objectives.

With that in mind, the examples offered are related to the various levels of training and illustrate the diversity of topics in this subject area. It must, however, be made clear that the objectives indicated are not intended to be an exhaustive list of the potential objectives of a curriculum in this field.

The statements relate, on the one hand, to the content of librarianship, archives administration and information science which is set forth, in particular, in the Guidelines bearing on curriculum development in these fields (Cook, 1982; Large, 1986; Neelameghan, 1978; Saunders, 1984).[2]

Moroever, they are related to the different training levels: technical, first cycle, second cycle, third cycle. We refer the reader to Annex I for the equivalencies of these levels as established by the International Federation of Library Associations and Institutions (IFLA) for the purposes of international comparison.

Bibliographical research on learning objectives in information science has identified 44 works or articles which have appeared since 1966. Of these, 26 place some emphasis on the formulation and utilization of learning objectives whereas 18 tend simply to refer to them.[3] Some of these works (25 in number, of which 17 are of particular importance) emphasize curriculum planning and development in the fields considered and formulate aims.

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1. For reasons of practicality, the masculine gender is used throughout the present document.
2. The full references to these documents are given in the section of the bibliography entitled 'Documents consulted for the drafting of the examples in the four worksheets'.
3. See the section of the bibliography on learning objectives in librarianship, archives administration and information science. References to authors who deal in some detail with learning objectives are indicated by an asterisk.

Other texts (19 in number, of which nine are of particular importance) deal with course planning including the formulation of general and specific learning objectives. These latter texts are concerned in particular with the following fields: remote search services, audio-visual aspects, administration, interpersonal relations.

Lastly, 23 of these 44 books or articles (including 13 of particular importance) were published between 1981 and 1987, 19 (including 12 of particular importance) belong to the period 1975-1980 whereas two date from before 1975.

To sum up, there is little available documentation on learning objectives in information science. What there is belongs to the past ten years at most and refers principally to aims connected with curriculum development; it places rather less empahasis on the development of general and specific objectives related to particular courses. The present document sets out to break new ground in this area.

The objectives are not, however, a panacea. The precision with which the objectives are formulated does not really influence teaching unless there is an interaction between these objectives and the other components of instruction. In the absence of such interaction, the precise formulation of the objectives is an empty formality. The objectives are a tool: certain teachers are able to use the process so as to define the objectives in a way that stimulates pedagogical reflection whereas others use them in a limited way and thereby restrict the range of their teaching.

In this sense, the texts in Part I of this document are designed to illustrate the links between the objectives and the other components of the educational process. In order to plan a course or a curriculum the reader will have to refer to other works dealing, for example, with various methods of teaching and learning and various models and means of evaluation. Some sources on that subject are indicated in the bibliographical references on course planning.

Furthermore, the texts in Part I of the document draw attention to certain difficulties to be overcome in connection with the use of the objectives. They do not, however, deal in depth with critical aspects of the objectives or with their theoretical foundations. Authors such as de Landsheere, d'Hainaut and Hameline have dealt with these subjects adequately.

It is hoped that the present document will provide help in the task of learning how to write objectives, with due regard for the process of formulating them in precise terms, and that it will encourage those concerned to make proper use of them as a tool.

OUTLINE OF THE DOCUMENT

Part I of this document consists of five short texts. Their aim is to create an awareness of the importance of learning objectives in education, to underline the interdependence between objectives and the other components of instruction and to suggest a procedure for the precise formulation of objectives.

The first text deals with the role of learning objectives. It shows the impact of the objectives on communication, as well as their importance in course planning, and of the choices which such planning involves, whether it is a question of choosing teaching material, teaching and learning activities or means of evaluation.

The second text deals briefly with the influence of values, of educational models, of the needs of the individual and of society on the choice of objectives.

The next text suggsts an approach to the precise formulation of learning objectives, having first explained the reasons for rejecting other possible approaches. Part II of the document, consisting of practical examples, is based on the proposed approach.

The fourth text sets out various ways of using the objectives in teaching. Numerous aspects are dealt with: preliminaries, the pace of learning, the independence of the student, the aim of evaluation, and so forth.

The purpose of the fifth text is related to the difficulties to be overcome in defining and using objectives: time spent in training, the danger of rigidity in planning instruction, the dehumanization of the educational process, and so forth.

Part II of the document contains four worksheets providing a means of differentiating between the levels of objectives so as subsequently to be able to formulate objectives relating to each of these levels. The worksheets consist of definitions, explanations, exercises and texts to help the user to learn how to write objectives. A more detailed introduction to these worksheets appears at the beginning of Part II.

These worksheets can be studied either by students on their own or, preferably, with the help of a resource person; they may also be used for group activities, in which case the group leader will choose examples and exercises most appropriate to the needs of the group members from among those offered.

The document ends with a glossary and bibliographical references. The references are grouped according to subject-matter: learning ovjectives (general works); learning objectives in librarianship, information science and archives administration; documents consulted for the drafting of the examples in the four worksheets; course planning.

PART 1

OBJECTIVES IN THE EDUCATIONAL PROCESS

1.1 THE ROLE OF LEARNING OBJECTIVES

Teachers vary in the degree of precision with which they see the objectives they are pursuing in their teaching work. To make these objectives more explicit and to define them more clearly demands additional work from each teacher, an effort which ought to be rewarded by improved results. However, the teacher cannot hope for satisfactory results if the objectives sought are not related to the other aspects of instruction.

To have a precise grasp of the role of learning objectives necessarily implies an insight into the possible relationship between the objectives and the other components of instruction.

Role of objectives

1. To improve communication
   - teacher-student
   - teacher-teacher
2. To be used in choosing learning activities
3. To facilitate the choice of teaching material
4. To specify the purpose of evaluation

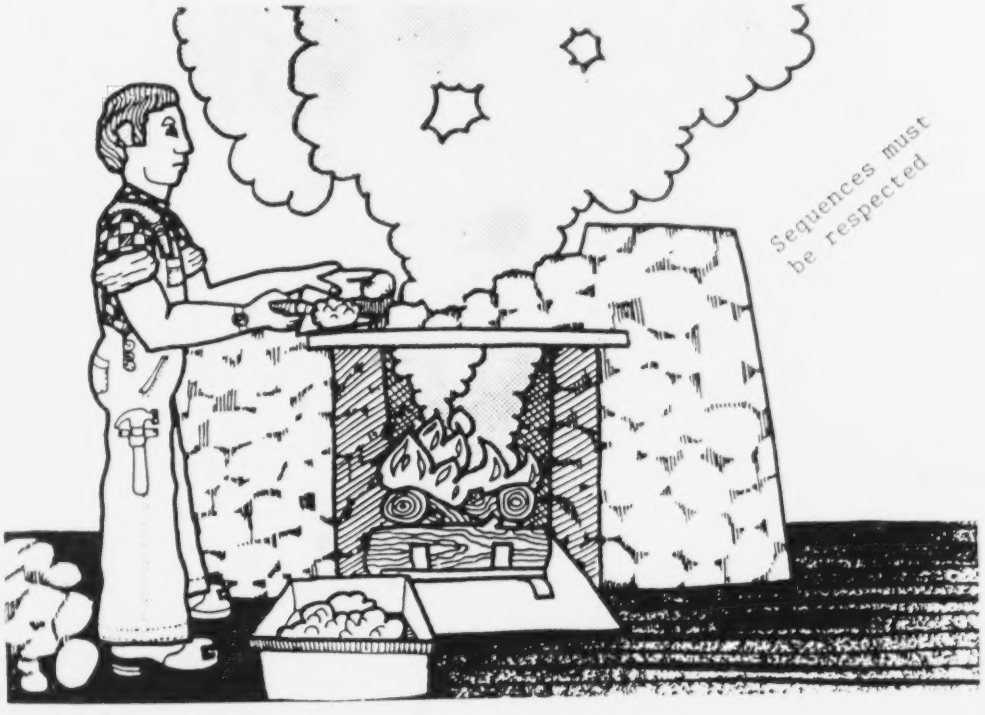
We shall deal in detail with each of these points.

1.1.1 Objectives improve communication between the teacher and the students and between the teachers of a given syllabus

The student must know precisely what is expected of him. He will thus devote his time to activities which will enable him to attain the course objectives. He will be in a better position to distinguish what is important from what is less important from among the learning tasks covered by the course. He will thus avoid dwelling on details of the subject-matter which he considers to be less relevant. He will not have to guess from the behaviour of his teacher what the latter considers important and what may be expected to be the subject-matter of the evaluation.

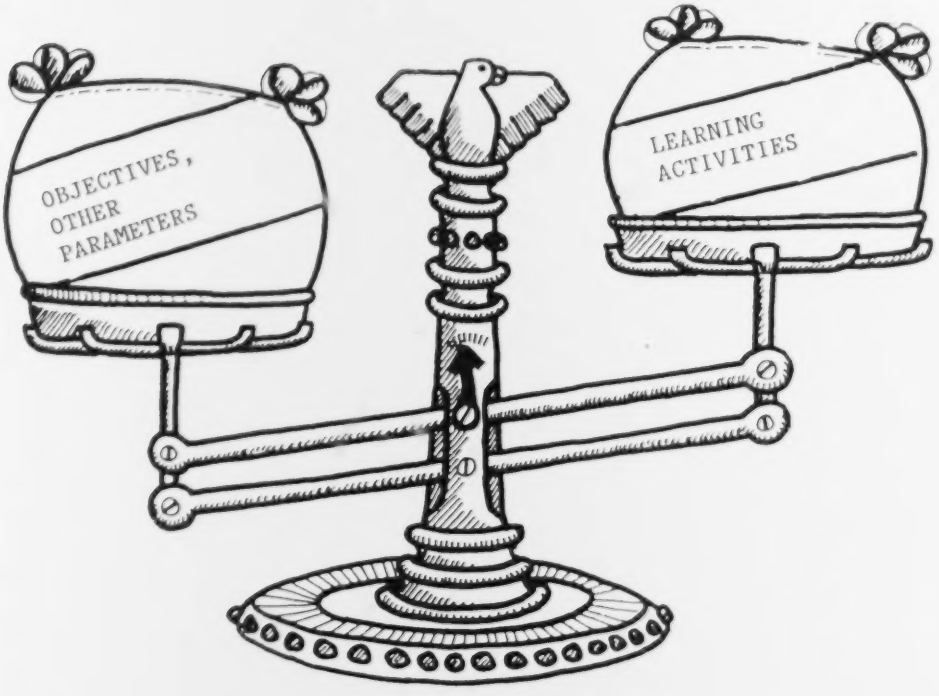
A teacher who has specified his objectives may discuss the selection of them with his colleagues. The teachers engaged on teaching a particular course may consult each other in order to pursue joint objectives.

When the objectives of the various courses of a curriculum have been precisely formulated it is possible to verify whether the curriculum respects learning sequences, in other words whether the items of learning which are the purpose of the course objectives are presented in an orderly progression. It is also easier to avoid duplication or omissions in what is to be learned. This operation calls for real teamwork so as to ensure that the syllabus is not merely a juxtaposition of courses but rather an organized whole designed to bring about the integrated and optimal development of abilities. Every school of librarianship, archives administration or information science would benefit from regularly going through such a procedure.



1.1.2 Objectives help in the choice of instructional and learning activities

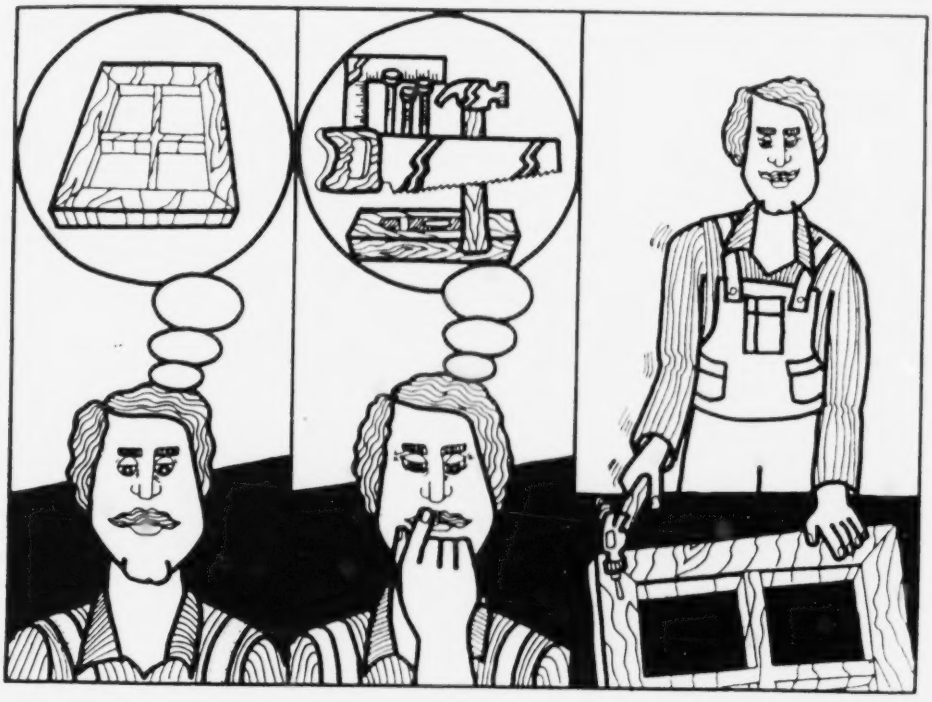
When the teacher chooses one or more instructional or learning activities he must, in principle, make allowance for a number of parameters, in particular his personal skills, the discipline being taught, available financial resources, the infrastructure at the disposal of teachers, the educational standard of the students, their number and their previous training. The learning objectives themselves are also an important parameter. Once the objectives have been specified it might be expected that the teacher will try to pair up a pedagogical method and a learning objective, or a set of objectives, so as to increase the chances of attaining that objective or set of objectives.



No instructional method is inherently correct or better than others. There is no point in wondering whether the lecture, the seminar or the case study are intrinsically valid methods. They are all valid pedagogical means of attaining certain objectives, subject to other parameters. For example, the lecture may be the means chosen for outlining a critical point of view, for presenting a synthesis of different fields of knowledge or for providing information which is not yet available in written or audio-visual form. The case study method, however, would be more appropriate for developing judgement or an ability to analyse problems and find solutions that are compatible with the various factors involved. Moreover, an in-service course provides a means of learning the skills required for the exercise of a profession such as those related to the ability to respond to the information needs of a client.

1.1.3 Objectives facilitate the choice of educational material

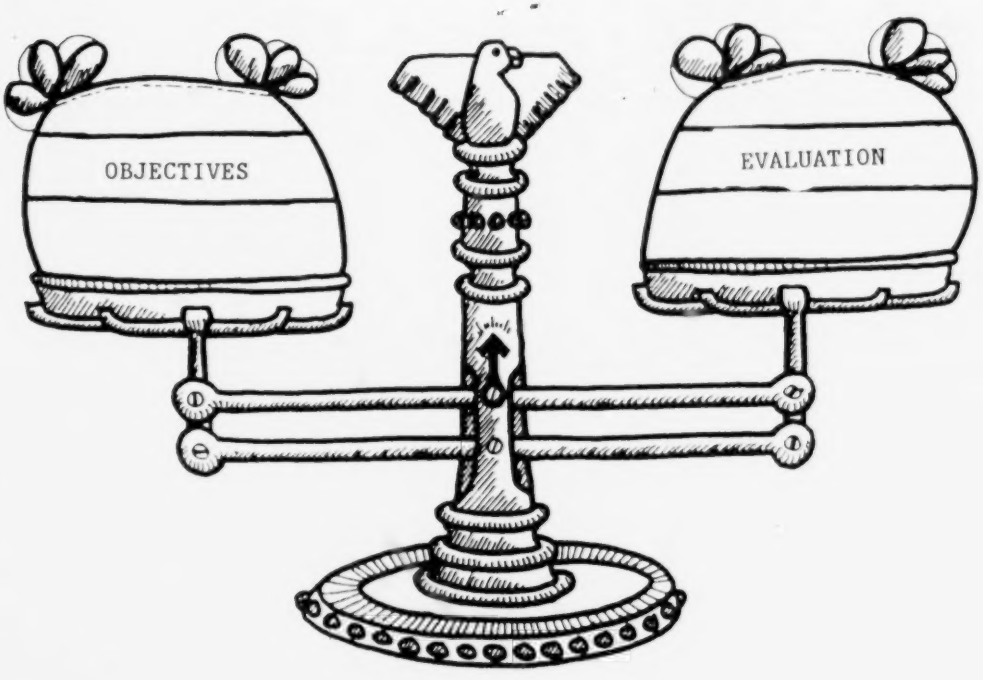
Once the objectives have been written, the teacher must ask himself what educational material he will use in order to attain them more effectively. The objectives serve as criteria for the choice of teaching aids: collections of texts, volumes, films and others. He must, as far as possible, seek to ensure that the teaching aids are appropriate to the objectives set.



Certain teachers consider that the objective of a course is to read, either in its entirety or in part, a volume covering the course content. However, 'to read the course book from cover to cover' is not an objective. The book is a teaching aid (among others) which may, in some cases, provide a means of attaining the learning objectives of the course. Thus the reading of a text setting out the rules for indexing a document cannot in itself be considered as an objective related to mastery of the rules concerned or, still less, to the application of those rules to documents. The mere fact that the student reads a text on the rules of indexing does not provide any assurance that he will have a satisfactory knowledge of those rules any more than it guarantees his competence to apply them. A distinction must be made between the objective (the knowledge or application of the rules of indexing) and the use of a particular teaching aid (the reading of a text).

1.1.4 Objectives provide a means of clarifying the purpose of evaluation

For the students, the most tangible effect of specifying learning objectives is the use made of those objectives to define more clearly what is being evaluated. For example, the ability to carry out minor restoration work on certain types of archive documents should be verified not by a question which merely calls for enumeration of the stages in the procedure to be followed but rather by a demonstration of the skill required.



The evaluation of learning must seek to verify whether objectives have been attained, otherwise there is a considerable risk that the students will cease to attach importance to the objectives. However precise and however clear the objectives may be, they will remain a dead letter for the students if the latter do not perceive these objectives as having a connection with the instructional activities and with the evaluation of learning.

Certain evaluation procedures which become possible when objectives are defined will be discussed in the text dealing with the ways in which objectives can be used in teaching.

The formulation of precise objectives gives the teacher greater motivation to acquire the means of attaining those objectives and to evaluate them.

1.2 THE SOURCES OF LEARNING OBJECTIVES

A curriculum is designed as a response to training needs. The degree of precision of the objectives is thus related to needs. One may regard the needs as being expressed in the form of a demand by students, parents, employers, and so forth. However, as d'Hainaut (1983) mentions, these demands are not always the expression of a true need, since the perceived need is not always a real one. Needs may also have remained unformulated because the individuals do not have the necessary information or the appropriate tools to become aware of them.

Other elements must be taken into account in formulating learning objectives. Over and above needs, there are teaching models[1] related to philosophies of education, values and models of society. Teaching models influence choices, such as the choice of ways of striking a balance between the needs of the individual and those of society, or the needs of present-day society and those of society in the future, and so forth. Certain teaching models focus primarily on the transmission of knowledge, whereas others offer training aimed at the development of cognitive processes (for example the problem-solving process). These few examples of various possible orientations of teaching models give an idea of the influence of teaching models on the choice of learning objectives.

The more clearly the objectives are specified, the greater account must be taken of certain factors. Consideration must be given to the characteristics of the students such as their prior training, their maturity, and so forth. For example, the thrust of a curriculum in librarianship, archives administration and information science differs depending on whether the curriculum is intended for students approaching the end of their secondary schooling or for students who have already completed two or three years of university study.

Certain constraints such as the timetable (whether the course is intensive or otherwise), the number of students, their way of life (for example, whether the students have to work concurrently with pursuing their studies) also have their importance. These constraints might unfortunately result in the neglect of objectives that ought necessarily to be pursued in favour of objectives of more limited scope. The exercise of clarifying

1. The following works may, in particular, be consulted:
BERTRAND, Y., Les modèles éducationnels. Montreal, Montreal University Centre for Education, 1979, 72 pp.
JOYCE, B., WEIL, M., Models of teaching (3rd edition), New York, Prentice-Hall, 1986, IX-518 pp.

objectives should, however, promote an awareness of the gaps that will arise in the curriculum; the attainment of such awareness is the first stage in the quest for appropriate solutions.

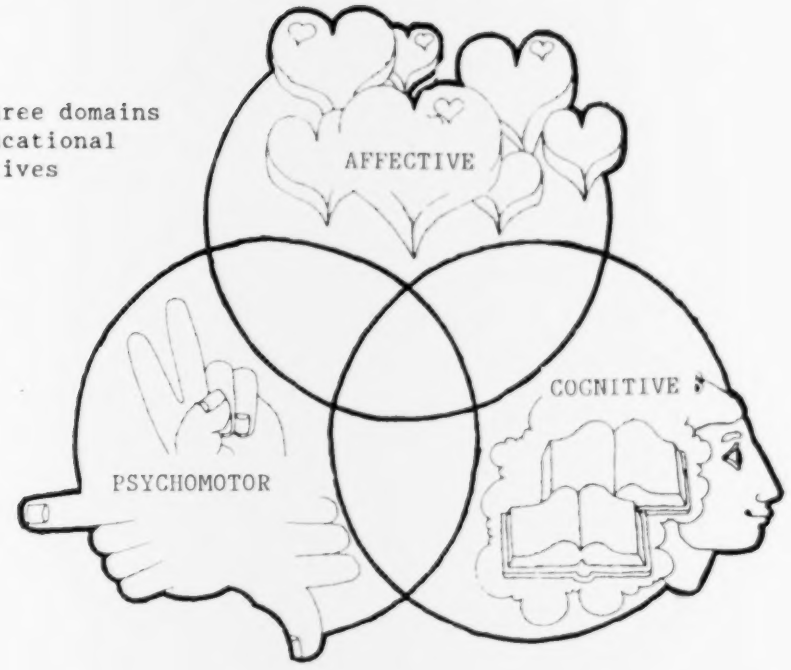
1.3 PROCESSES FOR DEFINING LEARNING OBJECTIVES

The processes for defining learning objectives vary widely. The quality of the objectives identified also varies. Thus, a number of teachers might carry out an analysis of the content of their course in order to derive the objectives from it. This is a method that we do not recommend since it carries with it the risk of maintaining the status quo. What takes place is merely that objectives are 'tacked on to' the existing course and objectives other than those which are inspired by the content - such as objectives which have to do with arousing interest in the subject-matter - are overlooked. Furthermore, this approach does not identify the most important objectives and, consequently, the course structure does not provide a means of ensuring that they are attained since the course is organized primarily on the basis of the sequential presentation of the various items making up the course content. How can one progress in a pedagogically sound manner without thinking about the orientation of the course through the choice of objectives?

There is another method with limitations similar to those of the first. It consists in analysing the tests or other means of course evaluation by trying to identify the objectives that lie behind them. In addition to the defects mentioned previously in connection with the analysis of course content, we here come up against an additional difficulty. Account must be taken of the ability that the student must have in order to meet the demands of the evaluation: the level of ability required varies depending on whether the evaluation involves an entirely new situation or whether it is merely a matter of remembering what has been covered in class.

Certain teachers write their objectives by deriving them from a taxonomy (in other words a classification) of objectives. The name most frequently associated with taxonomies in education is probably that of Benjamin S. Bloom. He and the members of his team have devised a division of objectives by 'domain': cognitive, affective and psychomotor. An objective in the cognitive domain might involve giving principal and secondary notations to documents according to the LC (Library of Congress) and Dewey classification tables. An objective in the affective domain might, for example, be associated with the student's adaptation to new technologies and to overcoming the anxiety caused by the change. Lastly, a psychomotor objective might be related to the skill in the proper use of the various keys on the keyboard of a microcomputer.

The three domains of educational objectives



The taxonomies of each of these three domains are based on the following principles: the levels of objectives go from the simplest to the most complex and each level assumes the preceding level. Thus, the cognitive domain comprises the following six levels: knowledge, comprehension, application, analysis, synthesis, evaluation.

We shall not discuss further the classification proposed by Bloom's team nor shall we summarize other taxonomies. This is a matter which has been adequately dealt with in many other works.[1]

1. See, in particular, the following works:
BLOOM, B.S., and others, Taxonomy of educational objectives: The classification of educational goals. Handbook I, Cognitive domain, New York, McKay, 1956.
KRATWOHL, D.R., BLOOM, B.S., MASIA, B.B., Taxonomy of educational objectives - the classification of educational goals, handbook II: affective domain, New York, McKay, 1964.
HARROW, A.J., A taxonomy of the psychomotor domain. A guide for developing behavioural objectives, Longman, 1972.
DE LANDSHEERE, G., DE LANDSHEERE, V., On defining educational objectives, Oxford, Pergamon Press, 1977. (This extremely interesting volume sets forth several taxonomies of objectives. The authors analyse and offer a critique of each of them.)

We shall merely add that this procedure, which involves indicating, for a given content, the taxonomic level at which it should be treated, is not the one we have chosen as a means of clarifying objectives. We took this decision because of certain drawbacks in the use of taxonomies. One of them is inherent in the artificial division of learning into three domains. These domains are interrelated but no taxonomy so far devised has succeeded in integrating all three of them satisfactorily.

More serious still, this way of proceeding does not question the relevance of the content: one comes up against the same problems as those raised by the process of defining objectives on the basis of an analysis of course content.

The same problem arises even when one proceeds rather differently by specifying, for each taxonomic level, the objectives to be pursued (for example, the objectives related to knowledge or to comprehension in the cognitive domain).

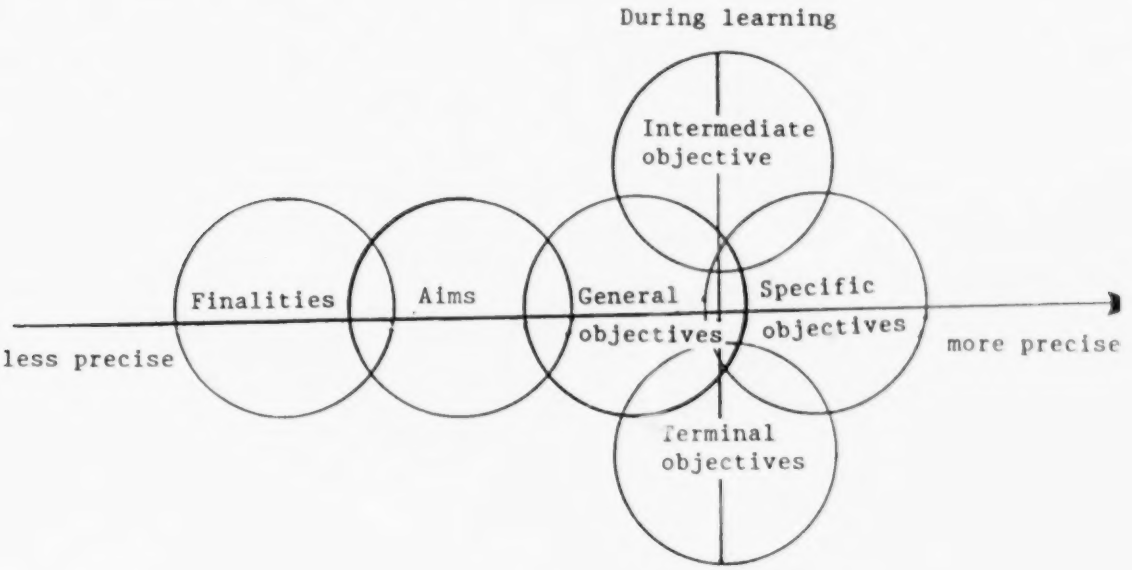
For this reason we suggest that the use of taxonomies be restricted to the analysis of objectives that have already been written. In this way, taxonomies can be used to classify the objectives produced in terms of the predominance of the behaviour mentioned and one can become aware, where applicable, of certain domains within objectives, or alternatively of certain taxonomic levels, which may have been under- or over-represented. For example, one may be surprised not to find any objectives corresponding to the domain of attitudes in a vocational curriculum in which the student will be brought into contact with the public. Alternatively, one might realize, in the case of a curriculum for training professional archivists, that there is too high a proportion of objectives at the level of knowledge or of comprehension and that objectives relating to the level of application or evaluation in the cognitive domain are neglected. Annex II gives an example of an analysis grid for cognitive objectives.

The procedure we suggest is as follows: first define the aim or aims of the curriculum bearing in mind the finalities of the educational system or of the teaching establishment; identify the general objectives of the course which fit in with the stated aims of the curriculum; then specify each general objective in terms of the specific objective or objectives which derive from it.

By proceeding in this way from the general to the specific one is sure of obtaining more valid specific objectives, and a closer correlation between these objectives and the orientation which it is intended to give to the syllabus and to the course. The objectives thus obtained may be qualified as terminal since they indicate the major learning achievements anticipated at the end of the course. On the basis of each of these terminal objectives one can undertake the task of defining the intermediate objectives which constitute stages towards the attainment of the terminal objectives.

This process of defining objectives in precise terms may be illustrated graphically by means of the following continuum:

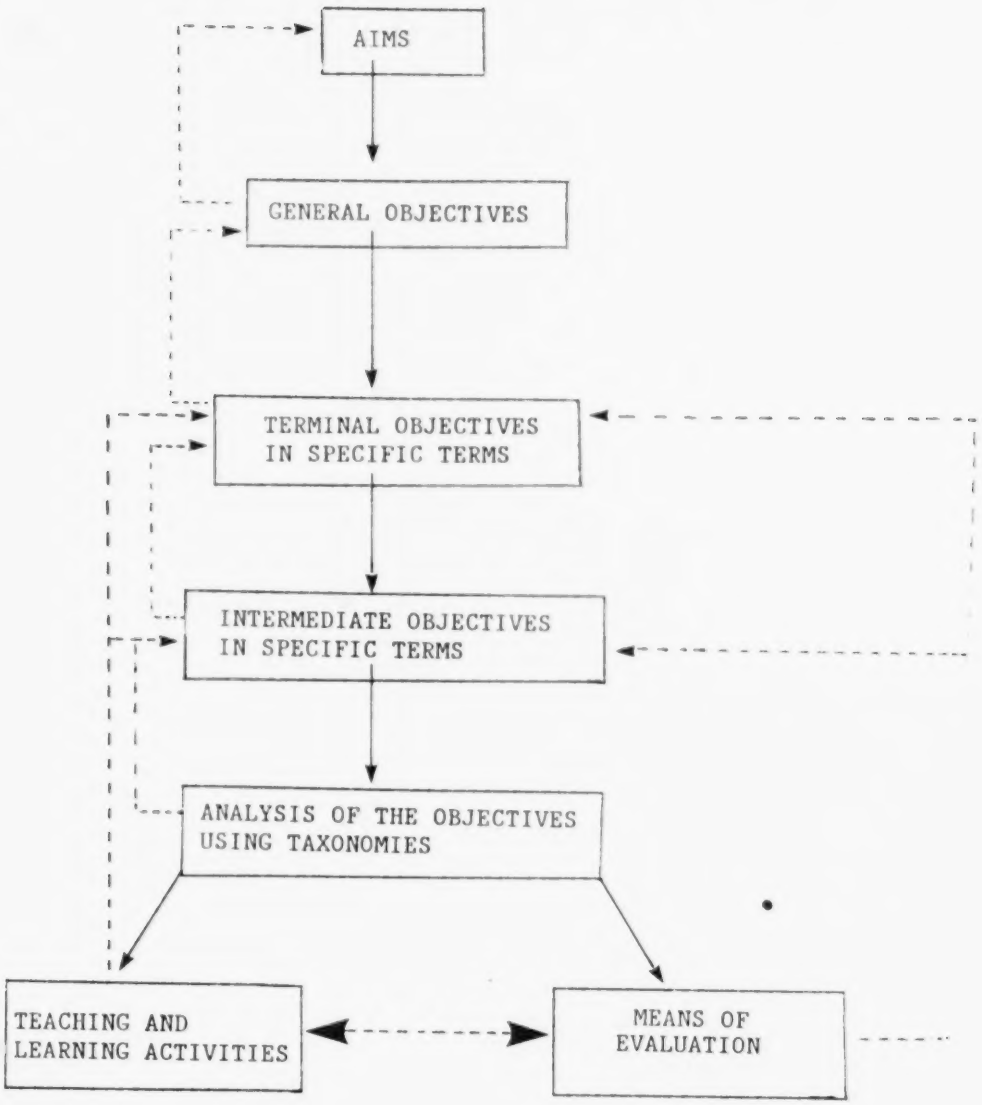
CONTINUUM GOING FROM THE GENERAL TO THE SPECIFIC:



The different concepts used for the continuum are defined in the worksheets in Part II of the document where the reader will also find examples and exercises taking the differentiation between these concepts further and providing an opportunity to write statements related to each of these concepts constituting different levels of objectives. The examples used to represent the various levels of objectives show what we are dealing with here really is a continuum and not a series of self-contained categories.

However, the clarification of objectives cannot by itself bring about improvements in teaching: it is in its interaction with other components of the educational process that such clarification becomes really beneficial. This is why the clarification of objectives must be seen as one of the stages in course planning.

The general objectives of the course are written using the aims of the curriculum as a starting-point. As we have said above, it should be possible to describe the specific objectives which clarify each of the general objectives as terminal. One can then go on to identify the intermediate objectives which represent the stages whereby the identified terminal objectives are attained. After writing the objectives in this way it may be useful to analyse them with the help of the taxonomies. Subsequently, the teaching activities, and the means of evaluation suited to the objectives which have thus been clarified, are determined. The work done at each of these stages provides an opportunity to question what has been produced by earlier stages and, where appropriate, to make changes. This dynamic aspect of course planning is illustrated by the flowchart which appears on the following page. The flowchart does not, however, represent all the stages in course planning. We have tried, rather, to demonstrate that the various components of the educational act (objectives, teaching activities and means of evaluation) are in a state of constant interaction both at the planning stage and during the process of teaching itself. Publications on course planning, several of which are mentioned in the bibliography, will make this planning operation easier.


AIMS
GENERAL OBJECTIVES
TERMINAL OBJECTIVES IN SPECIFIC TERMS
INTERMEDIATE OBJECTIVES IN SPECIFIC TERMS
ANALYSIS OF THE OBJECTIVES USING TAXONOMIES
TEACHING AND LEARNING ACTIVITIES
MEANS OF EVALUATION

1.4 USING OBJECTIVES IN TEACHING

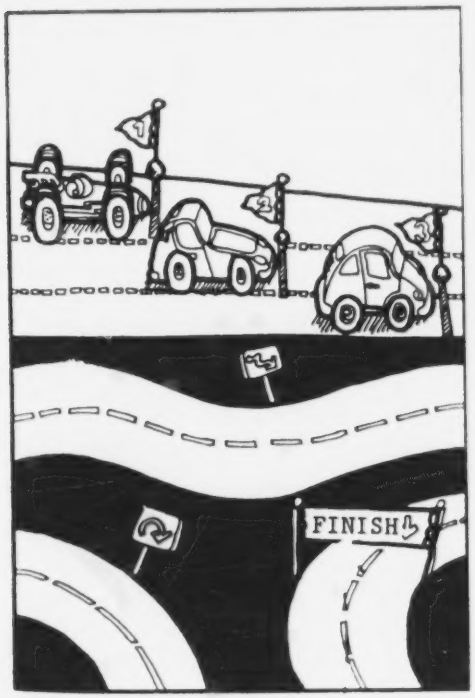
Once the objectives of a course have been specified, a number of possibilities become available: the way in which the objectives are turned to account varies from one teacher to another. As a great deal of work is required in order to exploit the objectives to the full the teacher may thus collaborate with colleagues or proceed by stages. In the latter case he must make a realistic choice among the many possible uses of the objectives bearing in mind the context in which he finds himself and the applications which have the greatest importance for his own teaching.

We shall indicate a number of ways of using objectives in teaching by drawing a parallel between an example of teaching in which the objectives are specified and another in which the objectives are not specified. This juxtaposition, which may at times seem to verge on parody, is intended to illustrate the possible links between the specific objectives and various aspects of the educational process, in particular, prior requirements, the pace of learning, independence, the role of the teacher, personalized teaching, the frame of reference of evaluation, the aim of evaluation, the demands relating to learning activities, the objectives evaluated, the re-use of evaluation material and the evaluation of the syllabus. Many of these ways of using the objectives are related to individualized instruction but there are also other ways of putting the objectives to good use. Furthermore, it must be recalled that the mere fact of having specified the objectives of a course does not of itself make the applications mentioned effective: these different applications of the objectives necessitate a certain amount of work.

TEACHING WITH SPECIFIC OBJECTIVES

Prior requirements

The prior requirements for a course may be specified with greater precision. They may be indicated in terms not only of courses but of pre-course concepts, skills or objectives. It is even possible to specify the prior requirements in terms of each of the course objectives.

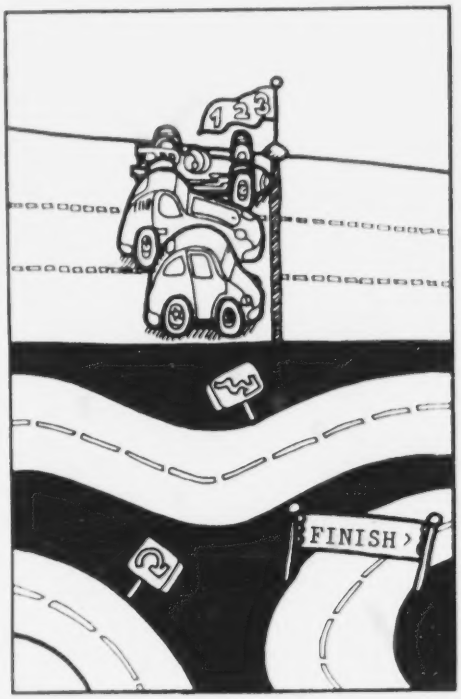


The study of prior requirements is particularly important in the case of the first-year course of a given study level. The students, having received varied kinds of preparation, differ widely in this respect. The strengths and the weaknesses of each student may be evaluated in relation to the prior requirements. The starting objective may thus differ from one student to another. Accordingly, no student spends time revising what he knows already. He concentrates on those prior requirements which he personally does not meet.

TEACHING WITHOUT SPECIFIC OBJECTIVES

Prior requirements

The prior requirements are generally expressed in terms of courses. At the start of the session the teacher merely recalls the most important aspects of prior courses before passing on to new material.



TEACHING WITH SPECIFIC OBJECTIVES

Pace of learning

If the means of learning and, where appropriate, the means of evaluation are made available to the student, he will be able to study at his own pace in order to attain the objectives since he knows what they are. It is thus possible to provide individualized teaching and the student becomes more independent in his learning.

TEACHING WITHOUT SPECIFIC OBJECTIVES

Pace of learning

The pace of the teacher becomes the pace of all: the teacher is generally guided by his perception of the pace of the most able students or of the average, depending on his approach to teaching. Often the weakest students are those who suffer the most; as they have not yet assimilated the preceding lesson they have little understanding of what is being presented to them.

TEACHING WITH SPECIFIC OBJECTIVES

Independence

In embarking on the individualization of teaching it must be remembered that not all students are used to having control over their own progress. It is necessary to accustom them gradually to taking on that responsibility: some will be slow to make a start on learning, while others will need to be reassured as to their ability to learn.

TEACHING WITHOUT SPECIFIC OBJECTIVES

Independence

The pace imposed by the teacher may stimulate the slow student to get down to the task of learning. However, the student may tend to believe that it is always necessary to have a teacher in order to learn.

TEACHING WITH SPECIFIC OBJECTIVES

Role of the teacher

When objectives are used in individualized teaching the teacher becomes a course planner, a guide and an aid to learning. He is more often in personal contact with the students. Sometimes a teacher or a team plans the course, prepares the material, and the assistants (often called demonstrators or monitors) may act as leaders for the students.

TEACHING WITHOUT SPECIFIC OBJECTIVES

Role of the teacher

The teacher is considered as a dispenser of knowledge. The qualities required are thus very different from those of a teacher who is a guide and they may vary depending on the methodology used.

TEACHING WITH SPECIFIC OBJECTIVES

Personalized teaching

It is possible to personalize teaching: the students may take part in drawing up the course objectives. The objectives and the learning activities may, either entirely or to some extent, be adapted to each student. This may be thought of as a series of learning contracts concluded between the student and the teacher.

Frame of reference of the evaluation

Because the objectives have been defined, it is possible to make an evaluation to ascertain whether they have been attained. Rather than comparing the student to his class companions, the evaluation determines whether he has attained a particular objective and whether he is suitable to embark on the next stage of learning. For example, success in a driving test is related only to the performance of the individual in relation to predetermined criteria. The frame of reference for interpreting the information is referred to in such a case as a criterion-based frame of reference.[1] Such a frame of reference should be used, for example, when one wishes to place students in relation to their ability to query a computerized data base.

TEACHING WITHOUT SPECIFIC OBJECTIVES

Personalized teaching

It is more difficult to personalize teaching: what generally happens is that the same course content is given to all, although the student is sometimes allowed to choose from among various learning activities.

Frame of reference of the evaluation

A student is frequently compared to others. The students may thus be classified, selected and differentiated in terms of whether they are strong or weak. In some cases, a particular failure rate per class is determined in advance; thus, a student's chances of succeeding in the course are greater or less depending on the group to which he belongs. The frame of reference used for interpreting the information is thus to be 'normative'.[1] This type of frame of reference should be used if the intention is to rank the students in a particular group on the basis of their skill in applying specific cataloguing rules to a series of documents.

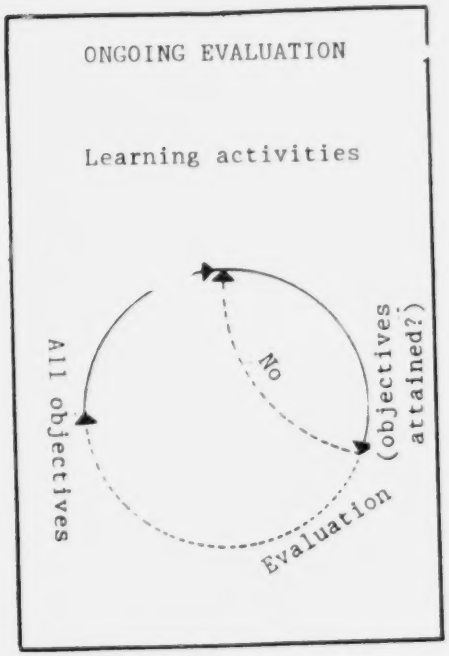
1. This term is defined in the glossary.

TEACHING WITH SPECIFIC OBJECTIVES

Aim of evaluation

Because the objectives have been defined it is possible to make a criterion-referenced interpretation of information in order to assist learning. This is what is known as ongoing evaluation.[1] Such evaluation is itself a learning activity, providing rapid and frequent feedback which indicates to the student whether a particular objective has been attained or not.

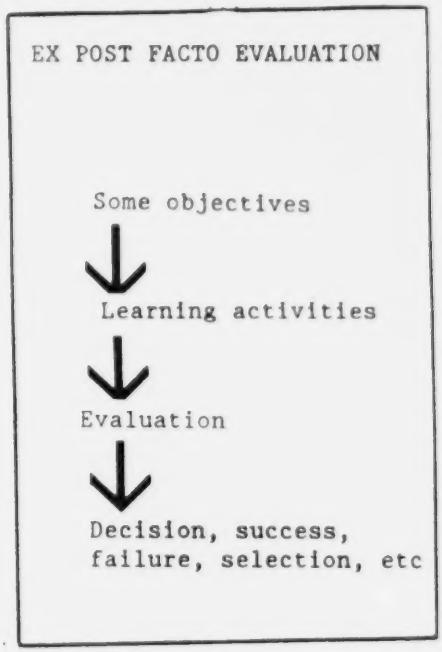
If the objective has not been attained, explanations are given or new learning activities are prescribed in order to enable the student to attain it. This type of evaluation, which encourages going back over the ground covered, is designed to enable a larger number of students to attain the objectives.



TEACHING WITHOUT SPECIFIC OBJECTIVES

Aim of evaluation

Most of the time, evaluation takes place at the end of a learning unit; whether such evaluation is frequent or otherwise, it does not encourage the student to go back over learning difficulties. Such evaluation, focusing on certification and promotion, is called ex post facto evaluation[1] and it often provides a fairly rapid and comprehensive feedback.

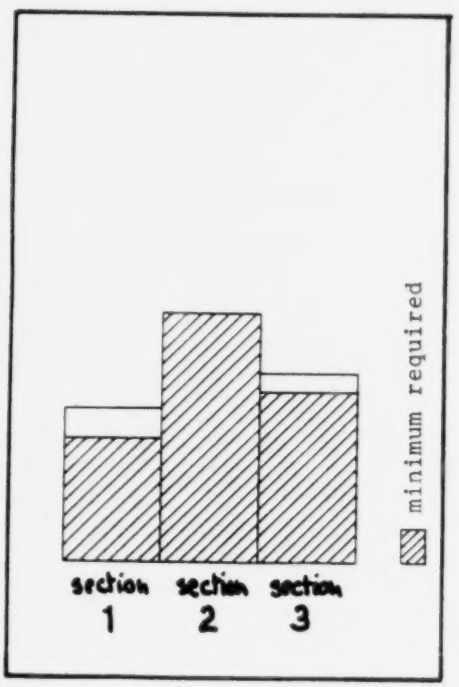


1. These terms are defined in the glossary.

Demands made in relation to learning

Ongoing evaluation within a criterion-based frame of reference is sometimes related to 'mastery learning',[1] in other words to cases in which a given level of competence is required. The level may be very high and, in the case of important items of learning, it may even entail total success. In other cases, minimum levels may be indicated for each of the objectives or for each part of the course. Care must be taken, however, not to restrict the student to fulfilling only these minimum demands.

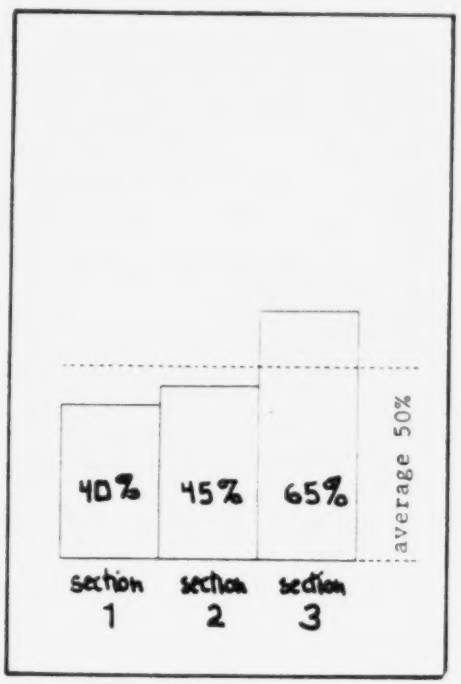
In the diagram below, which illustrates a student's results, we see that a minimum is provided for each of the sections: parts of the course (e.g. modules), objectives or others. The minimum required varies from one section to another; the requirement may even be as high as 100 per cent competence, as illustrated in section 2.



Demands made in relation to learning

There may be certain weak spots in the training given: success in one part of the course serves to offset failure in another, however important the latter may be. The demands made in respect of certain items of learning may be circumvented by a process of averaging out.

In the diagram below, which illustrates the results of an individual student, we see that marks of 40 per cent in section 1, 45 per cent in section 2 and 65 per cent in section 3 give an average of 50 per cent if the sections carry the same weighting. If the required average mark is 50 per cent it is possible to take the view that success has been achieved even if serious learning problems arise in connection with sections 1 and 2.



1. This term is defined in the glossary.

TEACHING WITH SPECIFIC OBJECTIVES

The objectives evaluated

In the case of ongoing evaluation[1] in a context of 'mastery learning',[1] all objectives are generally evaluated, whether they are easy or difficult. In order to identify learning problems, the objectives evaluated are generally those set at the beginning of a learning sequence which are those preceding the attainment of more complex objectives.

It is easier to make the attainment of certain objectives, such as the ability to carry out self-evaluation, a prerequisite for successful completion of the course, even if no mark is awarded in respect of those objectives.

TEACHING WITHOUT SPECIFIC OBJECTIVES

The objectives evaluated

As evaluation is in most cases of the ex post facto[1] type, what is evaluated is a sample of the content, in other words the most important parts. Thus, it might happen that a learning problem does not come to light and that a time comes when it is too late to remedy it. This happens above all where there are cumulative learning tasks.

1. These terms are defined in the glossary.

TEACHING WITH SPECIFIC OBJECTIVES

Re-utilization of evaluation material

With specific objectives it is possible to compile an item bank[1] for use in cases where attainment of the objectives can be verified by means of a number of questions. Each of the questions thus corresponds to an objective and it may be coded accordingly. The item banks make it possible to devise several different versions of a test. This is very useful when ongoing evaluation is used for a large number of students.

Interdisciplinarity

Interdisciplinarity is easier to achieve, where required. The objectives make it possible to discern the skills and intellectual aptitudes which are common to different courses, so as to establish the necessary links between the various disciplines.

TEACHING WITHOUT SPECIFIC OBJECTIVES

Re-utilization of evaluation material

A single test is given to the entire class for each part of the subject-matter which is to be tested by this means of evaluation. It sometimes happens that an entirely different test is given from one session to another unless the test given at the previous session is re-used, either in its entirety or in part, with the risks that it involves. Thus evaluation material which cannot be re-used is constantly being produced.

Interdisciplinarity

It is more difficult to see how, on the basis of content alone, interdisciplinarity can be effectively structured.

1. This term is defined in the glossary.

TEACHING WITH SPECIFIC OBJECTIVES

Evaluation of the curriculum

Certain approaches to curriculum evaluation are facilitated by writing of objectives which affords an opportunity to re-examine the relevance of the objectives. There will be a chance to check whether or not the learning items are arranged in an appropriate sequence. A check may be made as to whether the objectives specified in the curriculum have been attained. However, results which had not been anticipated must also be studied in the light of the objectives.

Evaluation may be of the ex post facto type (to form a global assessment of the advantages of a particular curriculum as compared with others) or of the ongoing type (to introduce the adjustments that are necessary in order to attain or modify the objectives).

TEACHING WITHOUT SPECIFIC OBJECTIVES

Evaluation of the curriculum

There is a risk that the evaluation of the curriculum will be restricted to checking whether the teachers, the students and the outside bodies concerned are satisfied.

1.5 DIFFICULTIES TO BE OVERCOME IN DEFINING AND USING OBJECTIVES

As we have already said, objectives are not a panacea. They are a tool which some people are able to use but whose potential is undervalued by others. Let us have a look at some difficulties related to their use and suggest ways of dealing with them.

1.5.1 The choice of objectives

The amount that is known in each field of knowledge is constantly increasing as disciplines develop. However, the number of years of study for each curriculum cannot be increased indiscriminately. It follows that a choice must be made: objectives must be identified which provide for the acquisition of basic skills, transferable skills and so forth. It is reasonable to expect that, having mastered one classification system, the knowledge acquired will be transferable to other classification systems. Thus it would be a more effective use of training time to give an in-depth understanding of the basic principles of classification than to provide training in several classification systems which are always likely to be modified.

The precision with which objectives are specified should provide some insight into the relevance of particular items of training content. Will this particular item of content be particularly useful? Is this item of content the most effective means of attaining the desired objective?

Even in not consciously choosing objectives one has, in fact, made a choice since shortage of time means that certain objectives must be set aside. This increases the risk of failure to give the desired training to the students.

The work of specifying objectives should involve consideration of the choice of objectives within a particular discipline so that the choice is made consciously and is justified on grounds other than customary practice.

1.5.2 Inappropriate objectives

The desire of certain teachers to achieve a high degree of precision for each of their objectives may lead them to eliminate some objectives which they have not been able to specify in sufficiently precise terms.

Thus, there would be a risk of certain objectives in the affective domain (for example objectives connected with an interest in helping others to obtain basic documentary material) being rejected. Similarly, objectives may tend (according to Bloom's taxonomy which is discussed above) to be applied only to the lower cognitive levels, in other words the levels of knowledge and comprehension, because the objectives relating to those levels are likely to be easier to write in specific terms.

The relevance of an objective must not be sacrificed in the interest of achieving a higher degree of specification. It is better not to modify an objective which is considered to be insufficiently precise until terms have been found to express it in a more specific manner without distorting its scope. For example, an objective such as 'the student will learn to work as a member of a team' should not be replaced by objectives relating exclusively to theoretical knowledge of team-work.

One way of avoiding the elimination of important objectives in favour of other less relevant ones is to derive general objectives from the aims of the

curriculum. One next derives the specific objectives and evaluates their relevance by comparing them with the general objectives pursued. One should always go through the successive stages in this exercise of specifying objectives in increasingly precise terms by asking oneself what the student must be capable of doing at the end of the course rather than how he will achieve that outcome: in this way one will obtain terminal objectives.[1] It is only after this stage that one should ask oneself what are the intermediate objectives[1] which will be used in order to attain these terminal objectives in the most effective way.

If one establishes objectives on the basis of course content there is a risk of failing to distinguish between intermediate objectives and terminal objectives. Indeed, one generally begins by establishing the necessary vocabulary, defining concepts and propounding theories before applying these concepts, theories, and so forth. This way of proceeding does not call in question the content being dealt with and does not distinguish the terminal objectives from the intermediate objectives by means of which they are attained.

In order to ensure that the objectives chosen are appropriate they should also be analysed in terms of one or more taxonomies. For example, using Blooms's taxonomy, the question may be asked whether it is normal for a particular course not to have any objectives in the affective domain. However, it must not be assumed that all courses must include objectives of an affective or psychomotor nature; to make such an assumption would be to avoid one problem by creating another.

1.5.3 The number of objectives

The objectives must be sufficiently clearly specified to ensure that they fulfil their purposes but not by creating so many of them that they lose their effectiveness. A tool which is too cumbersome to be of any use will be of no interest to anyone. There is no magic number. Nevertheless, for a 45-hour course one might wonder whether it is relevant to offer over 30 or so objectives, unless these have been grouped together so as to make them easier to understand or to reduce the effect of their being so numerous.

Thus one may present the general objectives of the course and then, under these general objectives, group together the more precise objectives which enable them to be attained. For vocational training curricula it is worth considering the idea of grouping the objectives in terms of the categories corresponding to the different occupational tasks. In the case of information science, the objectives might be grouped together in terms of the different segments of the document chain. The objectives for each part of a course may also be presented separately: for example, for each three-hour period if this is the way that teaching time is divided up.

On the other hand, it is unlikely that five objectives would be enough to specify in sufficient detail what is expected of the student: these would probably be general objectives of the course.

1.5.4 Difficulties in writing objectives related to the discipline involved and to the orientation of the syllabus

It is admittedly more difficult to define objectives in certain disciplines than in others. This may apply to recent disciplines which have not yet developed a common language and in which certain words do not have the

1. These terms are defined in worksheet No. 4.

same meaning for all the people concerned. In other cases, for example in artistic activities, there is a need to encourage creativity; it thus becomes important to choose terms which make that possible.

Curricula which bring together biological, psychological and social aspects, both in medical and in paramedical fields, present similar difficulties since the terms used in the objectives may be precise while at the same time being related to a global approach to the patient. One cannot, indeed, in a curriculum which stresses the importance of considering the patient as an all-round individual, write objectives which incorporate the nomenclature of the various pathological states. The objectives must express the underlying philosophy of the curriculum and enable a more appropriate evaluation to be made.

Thus it might be expected that the objectives of an information science curriculum, focusing on the needs of the user, might be more difficult to write in precise terms than those of a curriculum focusing on a mastery of various techniques.

Difficulties related to the precise formulation of objectives in such disciplines are not, however, insurmountable. One way of trying to express general objectives in increasingly specific terms is to use a glossary, where appropriate, to define terms and to foster the use of a common language. An effort must be made to state in explicit terms the criteria on which the teacher bases his pronouncements when he comes to the stage of evaluating learning.

1.5.5 Rigidity in the planning of teaching

Objectives must not become a straitjacket: care must be taken to maintain the flexibility that is required for high-quality teaching. If an objective were to prove inappropriate during the course, for example because the students' prior training turned out to be different from what had been expected, one must be ready to modify the objective.

Objectives impose only one constraint: any changes made to them must be justified. The result is a higher degree of professionalism in teaching. If the teacher wishes to cover one subject rather than another he cannot do so at whim and without regard to the objectives. But this does not prevent him from making use of a news item or something that crops up in class to stimulate the interest of the students in the course objectives or to maximize learning. For example, he may concentrate attention on certain group phenomena by making use of situations that have occurred in class. He may use an incident that occurs during the course to explore ways of dealing with certain management problems.

1.5.6 The dehumanization of teaching

Some teachers believe that a specific objective implies that all students must be expected to react in the same way, as when there is only one right answer to a question. That would be an unjustifiable restriction. One may, where appropriate, set objectives which allow each student to give a personal response. The outcome of a learning activity may take a variety of forms involving an element of originality and creativity. For example, in a school environment, an objective may deal with the exploration of ways of encouraging the children to make greater use of the library.

Similarly, educational models which are based on reflection and conceptualization by the students, taking their own experiences as a starting-point and thereby encouraging them constantly to subject their ideas

to the test of reality, cannot overlook the objectives, although the latter must, in such cases, be fairly broadly framed. The use of objectives in particular situations provides a means of encouraging activities which require thought and which promote real learning. If one has objectives one can benefit from the wealth of opportunities offered by a situation rather than being controlled by that situation. Furthermore, one must remain alive to the possibility of learning opportunities that were not foreseen in the objectives but which are made possible by the situation.

1.5.7 Non-participation by students in the determination of objectives

The students may, if it is felt desirable, become involved in determining the objectives of their own course. This is, however, possible only on certain conditions. It is difficult for the students to do this if they have not received training in the writing of objectives, if they have insufficient knowledge of the course content, or if the limits within which they are free to choose have not been defined. A student of some maturity who knows why he wishes to follow a particular course will be in a better position to define personal learning objectives. He will find this even easier if he is given support, for example in the form of a discussion with the teacher on the options available. Some teaching establishments give such support, in particular when the student is preparing for a work experience training course.

In other cases, one should not be unduly surprised to find that the students show little inclination to participate in determining their own objectives. In this field, as in others, independence is something that has to be learned.

1.5.8 Lack of interest in objectives on the part of students

It sometimes happens that teachers who have spent several hours writing the objectives of a course cease to believe that the task is relevant because the students show little interest in it. They notice, for example, that some of their students do not keep the document in which the objectives were introduced to them at the first lesson. How can such a situation be avoided?

It must, in the first place, be realized that at the start of the course it is not always possible for students to appreciate the meaning of the various specific objectives. They have not yet acquired the necessary knowledge or the appropriate vocabulary. For example, in information science, an objective relating to a grasp of the differences between pre-coordinated and post-coordinated documentary languages is largely inaccessible to them. In such cases it is preferable to keep to the objectives which are already accessible, for example general objectives, and to keep the description of the other objectives for a more appropriate time.

As we have already stated, the objectives will be of little interest to students unless they perceive the impact of those objectives on what goes on in class. It is for the teacher to emphasize the connection through the structure of his lessons and to make the students aware of it. For example, objectives may be used by the teacher as a means of taking stock of progress during the course: in so doing, he indicates what has been accomplished and what remains to be done. The teacher may mention the learning activities which are to be used in relation to the objectives. Above all, the teacher must use the objectives to plan evaluation and to remind the students what is the intended purpose of the evaluation: this is the aspect of using objectives to which they are most responsive. Objectives are a tool which can be used dynamically in class.

PART 2

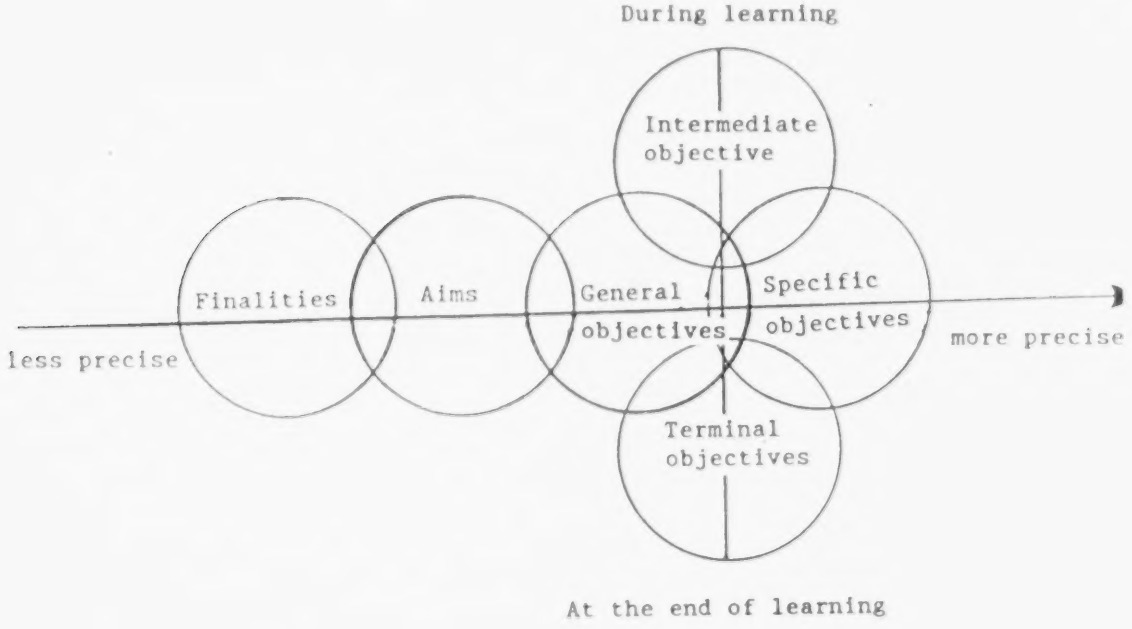
THE WRITING OF OBJECTIVES: WORKSHEETS

2.0 PRESENTATION OF THE WORKSHEETS

The four worksheets that follow will assist in the differentiation of the levels of objectives and in the formulation of statements corresponding to each such level. The first worksheet distinguishes between finalities and aims, the second between aims and general objectives. The third worksheet deals with the differences between general objectives and specific objectives. The fourth differentiates between terminal objectives and intermediate objectives. This last worksheet is not concerned with the degree of precision of the objectives but with their chronological distribution on the basis of whether learning takes place in lessons or otherwise.

Let us have another look at the continuum going from the general to the specific:

CONTINUUM GOING FROM THE GENERAL TO THE SPECIFIC



Finalities, aims, general objectives and specific objectives, in that order, are the degrees of precision of the objectives which form part of a continuum going from the general to the specific. We must bear in mind that this continuum also represents the process we are suggesting for defining objectives in precise terms: starting with the aims of the curriculum which take into account the finalities of the educational system or establishment, the general objectives of the course are identified; the next step is to specify each general objective by means of the specific objective or objectives which derive from it.

Certain authors draw more subtle distinctions between concepts relating to objectives. We shall, however, confine ourselves to the terms we have used so as to make it easier to apply the concepts in practice, bearing in mind the experience which has been gained of their use in widely varying disciplines in higher education.

Although we are speaking of a continuum and not of self-contained categories, we consider it important to distinguish the levels of precision of the objectives. The resulting common language not only means that a curriculum can more readily be structured in the same way as a particular course but also enables the teachers who are members of a particular team to avoid the pitfalls of vocabulary at the stage when they are establishing the objectives of a curriculum or discussing among themselves the objectives of a course.

These worksheets contain definitions, explanations and cautionary notes as well as various exercises in identifying, specifying and writing objectives. It will be noted that there is a follow-up test covering each of the worksheets after the exercises. Part II of the document is more than an exercise in vocabulary: it is a guide to the precise formulation of objectives using a process going from the general to the specific and it provides help in learning how to write statements corresponding to the various levels of objectives.

If these worksheets are used for group work, under the guidance of a resource person, it will be possible to discuss the answers to the exercise. Discussions on the relevance of the statements will, however, have to be kept until later and attention should be focused on the correlation between the statement and the degree of precision of the objectives (aim, general objective, etc.) which it is supposed to represent. Indeed, the role of the worksheets is not to offer aims, general objectives or specific objectives to be committed to memory but rather to develop drafting skills.

In the case of self-teaching, the reader will be able to refer only to the answers given in the worksheets or, in some cases, to a resource person.

2.1 WORKSHEET NO. 1 - FINALITY AND AIM

2.1.1 Objective of worksheet No. 1

The reader must distinguish between an aim and a finality. He must be able:

(a) to identify each of them;

(b) to write at least one example of each.

2.1.2 Definitions and examples

> Finality: Statement which reflects a philosophy, principles, a world view or a system of values and which indicates, in a very general way, the guidelines of an educational system or establishment.

Examples

The school must provide the greatest possible equality of educational opportunity for individuals.

The essential role of the university is to train students to think critically and creatively.

> Aim: Statement which defines the long-term orientation of a particular curriculum.

Examples

The students of librarianship and information science must develop information management skills which will enable him to apply theoretical concepts in practice.

The master's degree in information and communication science and technology is designed to train professionals who are capable both of working in existing documentation systems and of adapting to new information processing and communication roles.

2.1.3 Observations

This worksheet is not, in the main, designed to develop skills in the writing of finalities; it is intended, rather, to provide help in distinguishing between finalities and aims as well as developing skills in the writing of aims. As finalities are a function of the educational system, a teacher has no need to write statements of finalities for his course. He may, on the other hand, be involved with colleagues in his department (or in another teaching unit) in specifying the aims of the various curricula offered, and aims must be consistent with the finalities of the educational system. This is a worthwhile exercise because it involves conscious decision-making in choosing the orientation of curricula and promotes

co-ordination between the efforts of the various teachers involved in the process of attaining the aims set.

When the finalities of the educational system or the aims of the curriculum are somewhat unspecific, which, unfortunately, is all too often the case, the teacher must look for guidance to various indicators since the general objectives of his different courses should contribute to the attainment of the aims of the curriculum. He must be in a position to identify the finalities or the aims in documents and in official or unofficial pronouncements by persons responsible. The exercises in this worksheet promote the acquisition of this skill in identifying finalities and aims.

Although the dividing line between an aim and a finality is not in all cases easy to draw, the following four criteria may nevertheless make it easier to distinguish between them.

o Origin of the statement

If the statement derives from the analysis of a need or a task, it is very likely to be an aim.

If the statement derives from the desire to see a change in society or from the perception of a difference between what the author values and the reality which he perceives, it is likely to be a finality.

o Scope of application

If the statement applies specifically to a curriculum it is an aim.

If the statement provides guidelines to an educational system or establishment, it is in most cases a finality.

o Time-scale for attainment

If the purpose can be attained within a relatively short space of time (from a few weeks to a few years) it is more likely to be an aim.

o Acceptance rate

If people agree with the statement, irrespective of differences in their personal philosophy, it is probably an aim.

If the relevance of the statement is the subject of passionate discussion in the group, and if an appeal is made to immutable philosophical principles, it is probably a finality.

2.1.4 Identification exercise

Put a circle round F for a finality and A for an aim.

(a) The curriculum in documentation techniques is designed for the training of senior personnel in the setting up and management of documentation and information systems suited to the various fields of activity of society. F A

(b) To ensure that the students become specialists capable of playing a leading role in promoting and developing scientific, technical and economic information in their own country. F A

(c) The school must provide a means of identifying and training the individuals who are best suited to occupy key posts in society. F A

(d) To induce students of librarianship and information science to develop general document information skills which are suitable as a basis for training in other fields of university study. F A

(e) Advanced vocational training must aim to develop professional skills geared towards change. F A

(f) The first level archives administration syllabus is designed to enable students to assume responsibilities in an archives service with regard both to documents and to manpower. F A

(g) The student will develop a taste for information science management. F A

2.1.5 Answers to the identification exercise

(a) A This is an example of an aim for such a curriculum.

(b) A This is an example of an aim for a specialized higher education curriculum in scientific, technical and economic information for the developing countries.

(c) F This is an example of a finality which may be accepted by some societies and rejected by others depending on their needs, on the generally accepted values in that society, etc.

(d) A This is a possible aim for a first-level librarianship and information science curriculum.

(e) F This is a finality for teaching of a vocational type which should be reflected in the aims of the various vocational teaching curricula.

(f) A This is an example of an aim for such a curriculum.

(g) A This is an example of an aim relating to the affective domain (see the presentation of Bloom's taxonomy on page [23]).

2.1.6 Drafting exercise

In the space given, write a finality and an aim.

Finality: _____

_____

_____

_____

Aim: _____

_____

_____

_____

You may discuss your answers with the other participants, if need be, or with the resource person, but avoiding discussion as to the relevance of the finalities and aims. Instead, try to check whether the statement really corresponds to the required level (in this case, that of a finality or an aim). This comment applies to all tests and to the other drafting exercises.

2.1.7 Follow-up test

Identification test

Put a circle round F for a finality and A for an aim.

(a) To make information science students capable of establishing, applying and evaluating a national information policy. F A

(b) The school must aim to promote the all-round development of the individual: the physical, affective, intellectual, moral and social dimensions. F A

(c) Higher education must aim to promote and to integrate the mastery of a field of knowledge or a vocational skill, a critical outlook, the ability to think and an attitude of service to the community. F A

(d) The purpose of the advanced information and communication science curriculum is to train designers and producers of data banks. F A

Drafting test

In the space given, write a finality and an aim.

Finality: _____

_____

_____

_____

Aim: _____

_____

_____

_____

2.1.8 Answers to the follow-up test

Identification test

(a) A

(b) F

(c) F

(d) A This may be one of several aims of such a curriculum.

Note:

It should also be noted that the concepts of finality, aim, general objective, etc., may be applied to sectors other than teaching. For example, one of the finalities of a government in the field of information might be formulated as follows: 'The national information policy must aim to maintain and improve national, social and economic development by providing information services for the members of society'. From this finality would be derived the aims and objectives for various governmental information and documentation curricula.

2.2 WORKSHEET NO. 2 - AIM AND GENERAL OBJECTIVE

2.2.1 Objective of worksheet No. 2

The reader must distinguish between an aim and a general objective. He must be able:

(a) to identify each of them;

(b) to derive general objectives from the statement of an aim;

(c) to write at least one example of an aim and one example of a general objective derived from it.

2.2.2 Definitions and examples

> Aim: Statement which defines the long-term orientation of a particular curriculum

Examples

The student of librarianship and information science must develop information management skills which will enable him to apply theoretical concepts in practice.

The master's degree in information and communication science and technology is designed to train professionals who are capable both of working in existing documentation systems and of adapting to new information processing and communication roles.

> General objective: Statement, in more or less precise terms, of the direction of the learning activity. The statement, which defines the outcome of the learning activity, represents a particular point in the general orientation of a curriculum. (The general objective is the first level of specification of the aim from which it derives.)

Examples

To make the student of librarianship and information science capable of choosing and of applying the most appropriate means of making decision-makers aware of the importance of information in economic development.

To make the student of information science capable of identifying the needs of the users of a particular documentation system.

2.2.3 Observations

We have already mentioned in worksheet No. 1 the importance of identifying the aims of a curriculum through collaboration between all the teachers of the teaching unit offering the curriculum. The aims guide the choice of the general objectives of the various courses. Each teacher or group of teachers responsible for a given course must be guided by the aims of the curriculum in deciding what are the general objectives which the course ought to pursue: the general objectives must contribute to the attainment of the

aims of the curriculum. It must, however, be noted that a curriculum could, for example, have four or five aims while the general objectives of a given course might be attached to only one or two of those aims.

It is not always easy to distinguish between an aim and a general objective; the following criteria may make it easier to distinguish between them.

o Scope of application

If the statement applies more particularly to a curriculum, it is likely to be an aim.

If the statement applies more specifically to a course or series of lessons, it is probably a general objective.

o Time required for attainment

If the purpose may be expected to be attained within a relatively short space of time (one semester or less) it may be a general objective.

o Teaching or learning activities and evaluation

In the case of an aim, the terms used to describe it are generally too vague to give an idea how to set about attaining it or measuring it.

The writing of an objective, even in general terms, provides an insight into means of learning and evaluation.

2.2.4 Identification exercise

Put a circle round A for an aim and G for a general objective.

(a) To train documentation technicians capable of integrating with the various types of documentation bodies and of meeting the information needs of users. A G

(b) To enable the student to become familiar with the roles and responsibilities of an information professional. A G

(c) To make students capable of responding effectively to the information needs of users, particularly by means of modern techniques of processing and dissemination. A G

(d) The third-level curriculum in information and communication science is designed to provide training in research and to give access to university teaching careers in that discipline. A G

(e) To enable the student to apply the principles and methods for the development of holdings in documentation units. A G

(f) To familiarize the student with the automatic analysis of natural languages from a documentation perspective. A G

(g) The second level in information science is designed to train senior personnel in the field of documentary information and to enable them to work in their original administration, in semi-public bodies and in the private sector. A G

(h) The student will learn to comply with the rules, policies and procedure for analytic processing. A G

2.2.5 Answers to the identification exercise

(a) A This statement may be an example of an aim of a training curriculum for information science technicians.

(b) G This may be one of the general objectives of an introductory course in documentary information.

(c) A This may be an aim for a master's degree curriculum in information science.

(d) A

(e) G This may be an example of a general objective related to the development of document holdings.

(f) G

(g) A

(h) G

2.2.6 Examples of aims and of general objectives deriving from them

An aim may give rise to several relevant general objectives. We are not concerned here with drawing up an exhaustive list but of illustrating, by means of examples, how an aim may be specified in terms of general objectives.

For a given syllabus, the general objectives which seem most likely to enable us to attain the aim are chosen while bearing in mind the constraints: training time, prior training of the students, etc.

Here are some examples of aims and of related general objectives. We suggest, however, that you write your own example in the space given before reading those offered.

(a) The third-level information science curriculum is designed to train independent research workers capable of studying their own disciplinary field in depth and of incorporating the theories and methods of related disciplines.

General objective: _____

_____

_____

Examples of general objectives

To make the student capable of carrying out independently the various stages of an information science research project.

To make the student capable of reporting on the findings of his own research.

To make the student mindful of applying the rules of ethics in relation to research and publication.

To make the student capable of drawing up a realistic work programme.

(b) The information science master's degree curriculum must ensure development at university and in professional life in the context of lifelong education.

General objective: _____

_____

_____

Examples of general objectives

The student will become aware of the importance of continuous professional development in respect of documentary information.

The student will be capable of identifying his further training needs in information science.

The student will be in a position to choose the means of keeping his knowledge of information science up to date.

(c) The documentation option in the specialization curriculum is designed to train librarian-documentalists capable of responding to the needs of pupils and teachers in secondary education establishments.

General objective: _____

_____

_____

Examples of general objectives

To make the student capable of identifying the documentary resource needs of secondary-school teachers.

To make the student capable of making secondary-school pupils and teachers aware of their information needs.

(d) The documentation option in the first-level curriculum for career training in information is designed to train specialists in documentation techniques who are capable of playing a part in the economic sectors of production, applied research and services.

General objective: _____

_____

_____

Examples of general objectives

To make the student capable of informing users in a given economic sector of the principal primary and secondary sources of information relevant to that sector.

To make the student capable of carrying out the descriptive processing of monographs and periodicals relevant to that sector.

To make the student capable of carrying out the first-level analytical processing of monographs relating to that sector.

2.2.7 Drafting exercise

In the space given write an aim and at least two general objectives deriving from it. Where possible, draw on your own teaching experience.

Aim: _____

_____

_____

General objective: _____

_____

_____

General objective: _____

_____

_____

2.2.8 Follow-up test

Identification test

Put a circle round A for an aim and G for a general objective.

(a) To make the student capable of drawing up his own definition of information science and of justifying it. A G

(b) To bring the students to a stage at which they become high-level practioners capable of managing information and scientific and technical documentation systems in the humanities and the exact sciences. A G

(c) The librarianship and information science master's degree curriculum is designed to promote further training for professionals by enabling them to up-date their knowledge and relate practice to theory. A G

(d) To make the student capable of comparing operational methods in librarianship, archives administration and information science as between two or more countries. A G

(e) The student will be interested in promoting the use of the library by pupils in primary and secondary schools. A G

Test on specification of an aim

For each of the following aims give at least one example of a general objective deriving from it.

(a) The first-level curriculum in documentation techniques is designed to prepare students for work in a computerized environment.

General objective: _____

_____

_____

General objective: _____

_____

_____

(b) The post-graduate information science and documentation curriculum is intended to train designers and producers of data bases and data banks.

General objective: _____

_____

_____

General objective: _____

_____

_____

(c) The certificate in archives administration is designed to train personnel capable of applying the principles and methods of the integrated approach to archives.

General objective: _____

_____

_____

General objective: _____

_____

_____

Drafting test

In the space given write an aim and at least one general objective deriving from it. Where possible draw on your own teaching experience.

Aim: _____

_____

_____

General objective: _____

_____

_____

General objective: _____

_____

_____

2.2.9 Answers to the follow-up test

Identification test

(a) G

(b) A

(c) A

(d) G

(e) G This is a general objective related to the affective domain.

Test on specification of an aim

Here are some possible answers:

(a) The student will be familiar with the respective roles of technicians and specialists in documentary information.

The student will be capable of carrying out the different operations for documents acquisition in a given computerized environment.

The student will be capable of carrying out on-line the original and secondary cataloguing of the principal types of monograph.

(b) The student will be capable of choosing the technique for the creation of data bases and data banks which is best suited to a given objective.

The student will be in a position to design a bibliographical data base.

The student must be in a position to design a factual data base.

(c) The student will be capable of drawing up a timetable for the conservation of documents suited to a given context.

The student will be capable of making a description of a given archive group.

2.3 WORKSHEET NO.3 - GENERAL OBJECTIVE AND SPECIFIC OBJECTIVE

2.3.1 Objective of worksheet No. 3

The reader must distinguish between a general objective and a specific objective. He must be able:

(a) to identify each of them;

(b) to mention the characteristic or characteristics required in order for the objective to be termed 'specific';

(c) to derive specific objectives from a given general objective;

(d) to write at least one example of a general objective and one example of a specific objective deriving from it.

2.3.2 Definitions and examples

General objective: Statement, in more or less precise terms, of the trend of the learning activity. The statement, which defines the outcome of the learning activity, represents a particular point in the general orientation of a curriculum. (The general objective is the first level of specification of the aim from which it derives.)

Examples

To make the student of information science capable of identifying the needs of the users of a particular documentation system.

To make the student of librarianship and information science capable of choosing and of applying the most appropriate means of making decision-makers aware of the importance of information in economic development.

Specific objective: Statement which describes the trend of the learning activity. It is formulated in terms of observable behaviour. (It is an interpretation of the general objective from which it derives.)

Examples

The student must be capable of giving printed documents their principal and secondary classification numbers using the LC (Library of Congress) and Dewey classification tables.

The student must be able to identify different types of documentary information networks.

2.3.3 Characteristics of a specific objective

We shall give here the characteristics of a specific objective and explain them in order to distinguish clearly between an objective which is specific and another which is not. The first three characteristics are necessary if the objective is to be described as specific.

Characteristics of the specific objective:

(a) It is always expressed in terms of the student.

(b) It is unequivocal, in other words it is precise and supports only one interpretation.

(c) It describes an observable behaviour on the part of the subject.

(d) It specifies, where appropriate, the special conditions in which this behaviour is manifested and the criteria which will make it possible to judge whether the objective has been attained.

The specific objective is expressed in terms of the student

The requirement that an objective is expressed in terms of the student if it is to be designated as specific means that emphasis is placed on the student's learning rather than on the teaching given by the teacher. It is not enough for the teacher to have provided the teaching; it is also necessary for his students to have learnt.

This requirement, in conjunction with the writing of specific objectives, should encourage thinking about the link between teaching and learning. The teacher should try to specify his objectives by concentrating not on what he teaches but on the changes he wishes to bring about in his students.

The specific objective is unequivocal

The specific objective must be unequivocal; in other words it must be precise and have only one interpretation. Nebulous expressions can be loosely interpreted. The objective must express clearly what the student must do. It is only on that condition that the objective will fulfil its role: to provide for clear communication between the teacher and the students and among the teachers themselves; to help the teacher to choose appropriate learning and evaluation activities.

An objective such as 'the student will display curiosity' is open to interpretation. The same would be true of the following objective: 'the student will be capable of using the ERIC thesaurus'. In order to make these objectives unequivocal, it is necessary to consider what the student will do to demonstrate that he is displaying curiosity or that he is capable of using the ERIC thesaurus.

Certain terms may seem unequivocal and it is only by using them that one realizes that they need to be specified more precisely in order for the objective to be unequivocal. For example, the objective: 'to be capable of distinguishing between an aim and a general objective' may seem to be unequivocal. However, this objective may mean 'to give the definition of an aim and of a general objective', 'to give the characteristics which distinguish an aim from a general objective' or, for example, 'to identify a given statement as being an aim or a general objective'.

General terms such as to know, to realize, to understand, to familiarize oneself with, to become aware of, to appreciate, and so forth, lend themselves to differing interpretations. What is expected of a person who knows, realizes or understands must be specified if one is to infer that that person knows, realizes or understands. Terms as vague as this are an indication rather of aims or of general objectives.

In order to clarify the general objective, one derives from it a series of specific objectives. One chooses from among various possibilities the objectives which, given the context, seem to be the most relevant to the attainment of the general objective from which they derive. For example, the general objective 'to understand the meaning of technical terms' may give rise to the following objectives: 'to define a term in one's own words', 'to identify the meaning of a term when it is used in a context', 'to distinguish between terms which are similar in meaning'. Users must, therefore, reach an understanding on the terminology used and thus make the objective unequivocal.

The specific objective describes observable behaviour

The objective must describe an ability which the subject must have acquired at the end of the learning process. It is a question of specifying an observable ability and not a category of modes of behaviour such as those suggested by the words 'to understand' and 'to realize'. One must be able to grasp the reality of this ability by means of a concrete and observable action. Thus, an objective such as 'to see the value of such an experiment' is not specific.

A distinction must be made here between the process and the outcome, between the means and what one wishes to attain. For example, 'to discover such-and-such a principle of classification' is not an objective but a one-off learning process; 'to read such-and-such a text' is not an objective but an activity, a task to be accomplished.

A distinction must also be made between the objectives in a list of contents, such as one finds in certain course outlines. An objective comprises at least three parts: a subject (the student), a verb of action[1] (the observable behaviour which is expected) and a complement (the content). Thus, in the specific objective 'the student must be able to list different types of documentary information network', the subject is the student, the verb 'to list' refers to observable behaviour and the content is linked to the types of documentary information network. This content might be the subject of several other objectives: for example, 'the student will be capable of comparing various types of documentary information network' or 'the student will be capable of choosing the appropriate type of documentary network for a given requirement'. There can, therefore, be no confusion between objectives and lists of contents. The verb and the complement must be precise if the objective is to be specific.

It is all too often believed that where a very limited content is indicated within an objective, that is enough to make it specific. This is a mistake; the verb must be sufficiently precise to indicate an observable behaviour. To indicate, in an objective, that the student must know a very precise rule of indexing is not sufficient to make it a specific objective. It is necessary to specify what one means by knowledge of that rule: is it a question merely of stating the rule, as the cognitive level of knowledge might encourage us to believe? Or is it rather the ability to apply the rule which certain teachers encapsulate in the term 'knowledge'?

1. The reader will find in Annex III lists of verbs of action based on the cognitive and affective domains of Bloom's taxonomy. These lists provide help in replacing such verbs as to know, to understand and to realize by more precise verbs of action such as those required by the specific objectives.

The specific objective states the special conditions in which the behaviour is manifested

This characteristic means that the objective must, where appropriate, mention the conditions in which the behaviour must be manifested and the criteria that will be used to determine whether the objective has been attained or not.

The special conditions relating to the display of the behaviour are all those conditions which may make the difficulty of the objective variable and which make it possible to imagine a concrete situation in which the behaviour must be manifested. Although it is not necessary for all objectives to mention such special conditions, certain objectives demand that they should be mentioned. For example, the objective: 'the student will be capable of typing at a speed of 90 words a minute' could not be sufficiently precise to be specific if the time requirements in relation to the behaviour were not indicated. The same would apply for the objective: 'the student will be capable of drawing up automated search strategies appropriate to three given questions using only the descriptors of the ERIC thesaurus', if the conditions relating to the types of instruments used were not mentioned.

Similarly, it is not obligatory to indicate the criteria which will be used to determine whether the performance is satisfactory. The attainment or non-attainment of an objective is sometimes expressed in terms of all-or-nothing (examples: one is or is not capable of defining the nature of a 'non-book'; one is or is not capable of listing the three obligatory characteristics of a specific objective; one is or is not capable of establishing without mistakes a telephone connection with the DIALOG system for searching a bibliographical data base chosen in advance). In this case, quantitative criteria for verifying whether the performance has been attained are not indicated; the qualitative criteria[1] mentioned or implied are sufficient. On the other hand, one must sometimes indicate a criterion expressed as a percentage or as a proportion of 'right answers' to the evaluation instrument of the objective; it may also be a question of acceptable departure from a given standard (for example: to cut a piece of metal to size to within a tolerance of 0.0150 mm).

It must, however, be emphasized that the choice of evaluation criteria corresponds to the educational context: prior training of the students, methods of teaching, models of evaluation, and so forth. Thus, when ongoing evaluation[2] is systematized and linked up with 'mastery learning'[2] very high performance criteria may be demanded: for example, between 90 and 95 per cent. (A criterion below 100 per cent is generally chosen in order to allow for errors of measurement.) In certain cases, however, it would be unwise if not dangerous to make such demands. It is better not to indicate criteria for success than to formulate criteria that are completely divorced from the reality of the educational context.

Another problem arises in regard to the choice of criteria for success; it occurs, for example, when a minimum number of occasions is specified on which the appropriate behaviour must be observed before it is possible to say that that the learning has been mastered. For example, how many lumbar punctures must a medical student perform successfully before his learning of that procedure is complete? How many times must a student of librarianship be

1. These terms are based on DE LANDSHEERE, G., DE LANDSHEERE, V., On defining educational objectives. Oxford, Pergamon Press, 1977.
2. These terms are defined in the glossary.

capable of assigning a Dewey number to a documentary work before it is possible to say that he has completed that learning item?

There is no comprehensive answer to this problem. The number of repeats necessary in order to indicate that the learning has been mastered must be determined, making allowance for the educational context and the degree of accuracy aimed at. However, we consider it preferable to determine the number by stages rather than to indicate one which is unrelated to reality, particularly where the teaching structures do not offer a degree of flexibility such as to ensure that rapid adjustments can be easily made.

In conclusion, let us illustrate this fourth characteristic (in other words the one indicating the special conditions in which the behaviour is manifested).

Examples

The student will be capable of calculating the mean and standard deviation of a series of data connected with librarianship, using statistical processing software.

The student will be capable of assigning the right classification number using the most recent edition of the Dewey classification table, to at least 16 of the 20 documents offered to him.

The student will be capable of correctly cataloguing 10 monographs offered to him, using the AACR2 standards.

2.3.4 Observations

- The objective must only refer to a single behaviour to be acquired, otherwise it is somewhat difficult to evaluate effectively whether the objective has been attained and to identify the student's learning problems.

- The characteristics which we have mentioned for a specific objective correspond to the definition of an objective given by Burns (1975, 21). Other authors such as Mager (1974, 53), De Landsheere and De Landsheere (1984, 237) and Hameline (1985, 62) define an operational objective as being one which possesses the four characteristics to which we have referred. Mention should, however, be made of a number of differences: Mager, De Landsheere and De Landsheere, and Hameline indicate separately the conditions under which the behaviour must be displayed and the criteria used for evaluating whether the objective has been attained (both characteristics being necessary if the objective is to be considered as operational); Mager and Hameline mention only the first characteristic, namely that of focusing the objective on the student; De Landsheere and De Landsheere separate the observable behaviour from the outcome of that behaviour which is termed performance (in their example, 'the pupil will be able to make a transistor radio in ...', the transistor radio corresponds to the outcome); lastly, Mager as well as De Landsheere and De Landsheere do not explicitly refer to the requirement of being unequivocal.

- A general objective should give the guidelines of a course whereas a specific objective often has a more restricted scope. Thus, it may be said that the omission of an obligatory characteristic from a specific objective does not necessarily mean that a statement is to be described as a general objective of a course. It may simply be an objective which

needs to be rectified in order to make it specific. For example, an objective of the type 'to know the definition of the concept of network' is probably too narrow in scope to be considered as a general objective. It will be sufficient to replace the verb 'to know' by an expression such as 'the student will be capable of stating' in order to make this objective specific.

- Those who wish to specify their objectives will probably ask themselves the following question: how far should the objectives be specified? It may be appreciated that certain objectives are more specific than others and that some of them are closer to a general objective whereas others are undeniably specific. The continuum of specificity of objectives, going from the general to the specific, illustrates this, with the grey areas where, in particular, the general objectives and the specific objectives overlap. A term may seem precise to a teacher, or to a group of teachers, and sometimes even to an expert in the writing of objectives, and turn out, in actual practice, to be lacking in specificity (for example, by giving rise to a discussion on the means of evaluating the objective containing this term). In general, it can nevertheless be said that as long as the objectives do not fulfil their role, they should be clarified and made more specific, care being taken to avoid certain pitfalls such as ineffectiveness due to an excessive number of objectives.

- The various persons involved in a particular teaching syllabus are more readily able to agree on the validity of a general objective than on that of a specific objective.

2.3.5 Identification exercise

Put a circle round G or S depending on whether the objective is general or specific. If the objective is not specific, say why.

(a) The student must be capable of making a choice of the most appropriate method of gathering data for identifying the information requirements of a particular clientele. G S

(b) The student will know how different types of information networks operate. G S

(c) The student will be able to describe the main phases of the scientific and technical information production and circulation process. G S

(d) To make the student capable of commenting on the inter disciplinary nature of information science. G S

(e) The student must be capable of specifying the impact of documentary analysis on the circulation process of scientific and technical information. G S

(f) The student will become aware of the importance of books as cultural objects and as means of communication. G S

(g) The student will endeavour to improve his advertising and public relations skills in order to maximize the use of the documentary information services. G S

(h) The student will familiarize himself with the various international organizations to which documentary information professionals belong (e.g. IFLA, FID, etc.). G S

(i) The student will be able to identify the management concepts involved in a case-study of a documentary information service. G S

(j) The student will be capable of understanding the statistical methods used in librarianship and information sience research. G S

2.3.6 Answers to the identification exercise

(a) S

(b) G The meaning of the verb 'know' should be more precisely indicated and it would be an advantage to specify what types of information networks are intended.

(c) S

(d) G The objective should be written with the student in mind and should indicate precisely what kind of commentary is expected (e.g. amount of detail, aspects to be considered, etc.).

(e) S

(f) G It must be indicated what type or types of behaviour will be taken to indicate that the student has become aware of the importance of this matter.

(g) G It should be indicated in what way the student will improve his skills, and the content in terms of publicity and public relations should be specified.

(h) G The term 'will familiarize himself' should be clarified by specifying what the student will be capable of doing (e.g. describing the characteristics of these organizations, comparing them, etc.).

(i) S

(j) G A more precise term than 'understanding' should be chosen, indicating what the student will do to demonstrate that he has understood. What is meant by statistical methods should also be more clearly defined.

Note:

We consider that the non-specific objectives are sufficiently broad in scope to be described as general objectives.

2.3.7 Examples of general objectives and of specific objectives deriving from them

Several specific objectives may be deduced from a general objective; they may be organized in a sequence which is conducive to learning.

Here are some examples of general objectives and of specific objectives which may derive from them. We suggest that you write your own example in the space given before reading our suggestions.

(a) The student will be capable of producing an audio-visual document of some ten minutes in length promoting a particular type of documentation service.

Specific objective: _____

_____

_____

Examples of specific objectives

The student will be able to choose a medium appropriate for the context and to justify his choice.

The student must be capable of planning all stages in the production of the types of audio-visual document chosen.

The student will be capable of choosing or writing an appropriate text.

The student must be capable of dividing up the text.

The student will be able to plan the shooting of the film.

The student will be capable of shooting the film as necessary.

The student must be able to assemble the document.

The student will be capable of drafting accompanying documentation for the audio-visual document he has produced.

Note:

The objectives might be enumerated by stating once only at the head of the list 'the student will be capable of'. It must also be noted that it would be an advantage if some of the objectives were more specific. For example, the criteria for assessing whether the text is appropriate might give rise to as many specific objectives as there are chosen criteria.

(b) To make the student capable of using one of the three main methods of data collection in order to identify the information needs of a specific clientele (questionnaire, interview, detailed case-study).

Specific objective: _____

Examples of specific objectives

The student must be able:

to choose the most appropriate method of data collection for a specific clientele;

to prepare the corresponding data collection instrument;

to modify the instrument prepared on the basis of a trial run;

to draft the survey questionnaire and to use it in accordance with the rules;

to process the data using appropriate software;

to decide on the form in which the results of the survey are to be presented;

to analyse and interpret the results obtained;

to present the results of the survey in a way which is comprehensible to non-specialists.

(c) To make the student capable of informing users in a given economic sector of the main primary and secondary sources of information for that sector.

Specific objective: _____

Examples of specific objectives

The student will be capable:

of describing the main primary and secondary sources relevant to the textile industry;

of drawing up a guide for users of the main secondary sources relating to a given economic sector;

of identifying the periodicals relevant to the agriculture of a given country;

of writing a selective dissemination of information (SDI) profile for a commercial user.

(d) The student will know the main implications of participation in a documentary information network.

Specific objective:_____

_____

_____

Examples of specific objectives

The student will be capable:

of identifying the main functions that may be influenced by participation in a documentary information network;

of describing the impact of participation in a documentary information network on each of the functions identified;

of providing justification for standardizing the operation of documentary information networks;

of identifying structures suited to the management of a documentary information network;

of identifying the main legal implications of participation in a documentary information network;

of identifying the problems with which the various types of documentary information networks have to contend.

(e) The student will know various models of human communication.

Specific objective:_____

_____

_____

Examples of specific objectives

The student will be able:

to describe the mass communication models developed by Lasswell, on the one hand, and by Katz and Lazarsfeld, on the other;

to compare these two mass communication models;

to identify the limitations of each of these two models.

(f) The student will be capable of listening attentively to the client expressing his needs during a reference interview.

Specific objective:_____

_____

_____

Examples of specific objectives

The student will be capable of decoding the non-verbal messages conveyed by the client during a reference interview.

The student will be capable of reformulating in his own terms the request of the user without omitting any major detail.

2.3.8 Drafting exercise

In the space given, write a general objective connected with your teaching work and at least two specific objectives which derive from it.

General objective: _____

_____

_____

Specific objective: _____

_____

_____

Specific objective: _____

_____

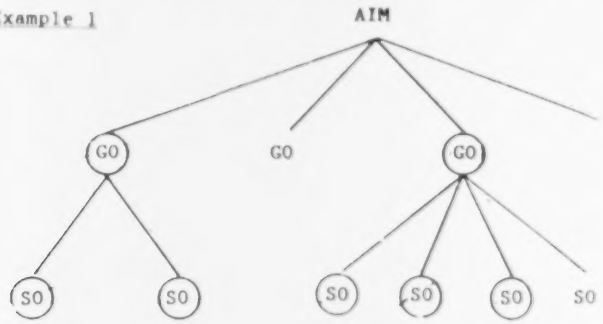
_____

2.3.9 Recapitulation of the first three worksheets

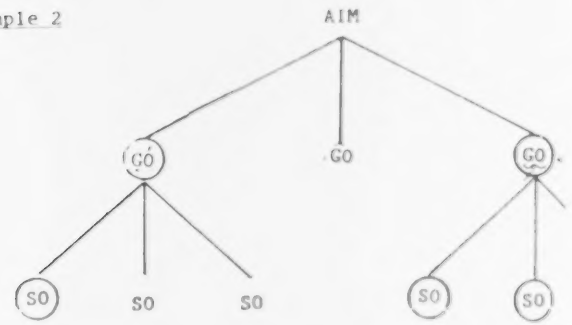
These first three worksheets cover the continuum going from the least to the most precise.[1] In order to avoid using simplistic objectives we strongly recommend you to formulate objectives following the continuum rather than directly enumerating specific objectives. The aims must therefore be specified in order to derive from them the general objectives from which one will then derive the specific objectives. Each of the levels is therefore an interpretation of the level which precedes it and, in order to progress through the continuum, one asks questions such as: 'what does this objective mean?', 'what behaviour would demonstrate that this objective has been attained?'.

The two diagrams below illustrate this process of elaborating specific objectives. 'GO' means general objective, 'SO' means specific objective and the circle indicates the objectives selected as being relevant to the curriculum for each of the levels of precision.

Example 1



Example 2



1. See illustration of the continuum on page 43.

Using two concrete examples in the field of information science, we shall illustrate what is meant by this process of specifying objectives which is initially applied to an aim of a given curriculum in order to derive from it some general objectives. The next step is to make the general objectives specific unless they are not selected as objectives for the curriculum. It should be noted that the general and specific objectives indicated here as examples do not constitute an exhaustive list.

Example 1

Aim: The first-level librarianship and information science curriculum is designed to train documentary information specialists capable of performing and managing the operational activities of a documentation unit.

General objectives:

The student will be capable of applying the concepts of management to the operation of a documentary information service.

Specific objectives:

The student will be capable of putting forward solutions supported by theory for case-studies involving leadership.

The student will be capable of defining the aims and objectives of the human resources management policy of a given department.

The student will be capable, for a given department, of suggesting a human resources management machinery.

...

The student will be capable of using the main accounting tools of a documentary information service.

Specific objectives:

The student must be capable of drawing up the accounting balance sheet of the budget of a documentary information service.

The student will be capable of making entries in the accounts book corresponding to the acquisition of monographs.

The student will be capable of using a particular software for performing accounting operations relating to documents acquisition.

...

The student will be capable of performing the main operations relating to documents acquisition.

Specific objectives:

The student will be capable of drawing up a list of suppliers and keeping it up to date.

The student will be capable of applying the classification rules to the new entries to be incorporated in the author/title catalogue.

The student will be able to draw up periodically a list of new acquisitions.

...

The student will be capable of carrying out the descriptive processing of monographs and serial publications.

Specific objectives:

The student will be capable of applying to the processing of monographs the cataloguing rules that are current in his own country.

The student will be able to assign to a set of monographs the relevant principal and secondary classification numbers, using the LC (Library of Congress) classification table.

The student will be able to assign to a set of monographs the relevant principal and secondary classification numbers, using the Dewey decimal classification table.

...

The student will be capable of keeping up to date the various catalogues of a documentation unit.

...

Example 2

Aim: The syllabus for the master's degree in librarianship and information science is designed to train specialists capable of managing archives for administrative and research purposes.

General objectives:

To make the student capable of managing archives geared to the needs of administrators, whether the documents are in the active, semi-active or inactive phase.

Specific objectives:

The student will be capable:

of establishing, for a given context, policies and regulations concerning the communicability and confidentiality of archives;

of establishing a list of priorities for the types of documents to be processed;

of choosing the means of weeding out archive documents.

...

To make the student capable of processing active and semi-active documents produced and accumulated by an administration.

Specific objectives:

The student will be able:

to set up a classification system suited to the context;

to make arrangements to locate active and semi-active documents;

to carry out the conservation of active and semi-active documents;

...

To make the student capable of processing historical archives.

Specific objectives:

The student must be able:

to choose historical archives, group which are to be acquired;

to classify historical archives group;

to ensure the conservation of historical archives;

...

To make the student capable of exploiting the potential of an archives group.

Specific objectives:

The student will be able:

to choose the type of search tool that is appropriate in order to exploit the value of a given archives group;

to arrange an exhibition using a given archives group;

...

To make the student capable of applying appropriate techniques for archive conservation.

Specific objectives:

The student will be capable:

of choosing an appropriate technique for the conservation of a particular archive medium;

of carrying out the minor restoration of paper documents;

...

2.3.10 Follow-up test

Identification test

Put a circle round G or S depending on whether the objective is general or specific. If the objective is not specific, say why.

(a) The student must be able to enumerate the principal types of documentation syntaxes. G S

(b) The student will recognize the importance of the concepts of communication and information in present-day society. G S

(c) The student will be capable of drawing up a policy for the development of holdings intended for a clientele consisting of children. G S

(d) The student must be able to describe the librarianship, archives administration and information science activities of the following organizations: Unesco, the Food and Agriculture Organization of the United Nations, the International Labour Office. G S

(e) The student must be capable of recognizing, for a given piece of research, whether the statistical methods used are of the descriptive or inferential type. G S

(f) The student must be able to identify the various criteria for classifying documentary information networks. G S

(g) The student will know about the essential equipment for the use of a given audio-visual document holding. G S

Test on specification of a general objective

For each of the three general objectives given below, give at least one example of a specific objective deriving from it.

(a) To make the student capable of applying the principal techniques for content analysis of documentary information in terms of the requirements of users.

Specific objective: _____

(b) The student will be capable of planning the automation process of a documentation unit.

Specific objective: _____

(c) The student will be capable of evaluating the impact of new technologies on the communication of documentary information.

Specific objective: _____

Combined test covering the first three worksheets

Put a circle round F if the statement is a finality, A if it is an aim, G if it is a general objective and S if it is a specific objective.

(a) The student will be capable of describing the development of libraries through the ages. F A G S

(b) Lifelong education must ensure that each person acquires basic education and training for an occupational qualification related to the demands of an evolving society. F A G S

(c) The student must be able to describe the various possible components of a national bibliographical data exchange network. F A G S

(d) The student of librarianship and information science must develop information management skills related to the requirements of users. F A G S

(e) The student will understand the essentials of descriptive statistics used in librarianship and information science research. F A G S

(f) University-level training must aim to develop individuals capable of bringing about social development. F A G S

(g) The student will be capable of carrying out the analytical processing of a given audio-visual archive holding. F A G S

(h) The second level of librarianship and information science should enable the students to develop research skills in their discipline. F A G S

(i) The student will be capable of working as a member of a team. F A G S

2.3.11 Answers to the follow-up test

Identification test

(a) S

(b) G The behaviour by means of which the student will show that he recognizes the importance of this subject must be specified.

(c) G Even if the clientele is defined it would be necessary to be more specific about what such a policy should comprise: aspects to be taken into account, the given environment, etc., in order to derive specific objectives from it.

(d) S It might be an advantage, in certain cases, to be more precise and to split the objective up into several objectives, each of them relating a single activity (librarianship, archives administration) and a single organization.

(e) S

(f) S

(g) G It would be necessary to specify what is meant by 'know about' and by 'indispensable equipment'. For example, is it merely a question of enumerating the items of which such equipment consists?

Test on specification of a general objective

Here are some possible answers:

(a) The student will be capable:

of choosing, for a number of specific documents, the items of information which will be used for retrieval purposes with a particular clientele in view;

of translating, using natural language indexing, the chosen items of information;

of translating, with the help of a thesaurus, using controlled language, the chosen items of information;

of writing an indicative abstract of a given document;

of writing an informative abstract of a given document.

(b) To make the student capable:

of analysing the operation of a given documentation unit;

of deciding whether a documentation unit should be automated and of justifying his decision;

of making a choice of appropriate systems and software for a given documentation unit.

(c) The student must be able:

to identify the new communication and information technologies used in the circulation of documentary information;

to describe at least three uses of artificial intelligence in the field of documentary information.

Drafting test

Consult a resource person if necessary.

Combined test

(a) G The content aimed at should be more precisely stated: by reference to historical periods, stages of development, or other criteria.

(b) F

(c) S

(d) A

(e) G What the student will do in order to demonstrate that he has understood should be specified.

(f) F

(g) G More detail should be given on the type of document (sound, visual, audio-visual); one might also refer to the indexing of this type of document, to the creation of search tools suited to a given audio-visual holding.

(h) A

(i) G It should be specified what is meant by 'to be capable of working as a member of a team' (e.g. receptiveness to criticism, willingness to express one's own point of view, acceptance of points of view differing from one's own, and so forth). This is an example which does not apply only to an information science syllabus. It may be suitable for any syllabus for training people who, in carrying out their functions, have to work as members of a team.

2.4 WORKSHEET NO.4 - TERMINAL OBJECTIVE AND INTERMEDIATE OBJECTIVE

2.4.1 Objective of worksheet No. 4

The reader must distinguish between a terminal objective and an intermediate objective. He must be able:

(a) to identify them;

(b) to write intermediate objectives deriving from a given terminal objective;

(c) to write at least one example of a terminal objective and one example of an intermediate objective deriving from it.

2.4.2 Definitions and examples

Terminal objective: Statement of a lasting and intrinsically useful skill which the subject must have acquired at the end of a particular learning activity. (This skill may be described in general or specific terms; in other words, one may have general terminal objectives and specific terminal objectives.)

Examples

The student will be capable of assigning appropriate subject headings to a documentary work intended for children.

The student will be capable of deciding whether it is appropriate to automate a documentation unit and of providing justification for his decision.

Intermediate objective: Statement which indicates, within a sequence of various items of learning, an item which the subject must master before the terminal objective is attained. (Intermediate objectives may be general or specific but they are used as a means of attaining a terminal objective. They are objectives which apply during the learning process.)

Examples

Let us assume the following terminal objective: 'The student must be capable of choosing the method which is most appropriate to his research problem, whether the method belongs to his own disciplinary field or to related disciplines'.

The intermediate objectives might be as follows:

the student must be capable:

of identifying the sources of information that describe various methods of research which will enable him to make his choice;

of relating the main available types of research to the methods which they require;

of defining the concepts of quantitative method and qualitative method;

of describing two examples of a quantitative method;

of describing two examples of a qualitative method;

of enumerating the various methods of his own discipline or of related disciplines applicable to his research problem.

2.4.3 Observations

Unlike the first three worksheets which deal with the continuum going from the general to the specific (the purpose of which is to clarify the statement and clearly identify the behaviour expected), the purpose of worksheet No. 4 is, rather, to distinguish, using the terms of Hameline (1979, 99), between the outcome of training (terminal objectives) and the itinerary chosen (intermediate objectives) to attain that outcome.

The question is to be seen in terms of the dimension of 'time' in relation to the learning process: the terminal objective is what one wishes to attain at the end of the learning process; the intermediate objectives are the stages whereby this terminal objective is attained through the learning process. This is, incidentally, why certain people are reluctant to apply the term 'objective' to intermediate objectives and tend to reserve it exclusively for terminal objectives. The question by means of which intermediate objectives can be derived from a terminal objective may be formulated as follows: 'How is one to proceed in order to attain this terminal objective?'. This makes it easy to understand why it is said that intermediate objectives have to do with the educational means and learning activities through which the terminal objective is attained.

It is useful to make a distinction between a terminal and an intermediate objective for the following reasons:

(a) the effort to identify terminal objectives encourages thinking about the really important skills one wishes to impart through a given curriculum;

(b) the identification of terminal objectives is helpful as a means of distinguishing between what is essential and what is subsidiary and of focusing the means of evaluation for purposes of certification (ex post facto evaluation[1]) on essentials;

(c) the intermediate objectives provide a means of introducing checkpoints into the learning process (ongoing evaluation[1]) at strategic intervals in the case of learning processes which must proceed in sequence. This makes it possible to take corrective action before it is too late.

The following points may be helpful in the identification of terminal objectives and intermediate objectives:

- The more important, essential, broad, complex and difficult a type of behaviour seems, the greater the likelihood that it is a terminal objective; the more subsidiary, limited, simple and easy the behaviour seems, the more likely it is to be an intermediate objective.

- Consensus will be easier to achieve in the case of terminal objectives (in other words on the purposes of training) than in that of intermediate objectives which represent the stages and potential means through which those ends are attained.

1. These terms are defined in the glossary.

It is sometimes easy to distinguish between a terminal objective and an intermediate objective. For example, it is difficult to consider objectives such as 'to be able to formulate a particular definition' as being terminal. They are of little use in themselves but they may, in a learning sequence, be the first stage on the way to a broader terminal objective.

The distinction, however, is not always easy to make, particularly in isolation from a context, as in the exercise below. Even when looking at the objectives of a given curriculum, some people may consider that an objective is really a terminal one, in other words that it undeniably belongs at the end of a learning process, whereas others will consider it as a stage - an intermediate objective - to be passed before a more complex learning item is mastered. The division of learning sequences in a curriculum into a certain number of courses does nothing to simplify the matter. Let us consider the various introductory courses: the objectives of these are probably all intermediate objectives while the terminal objectives to the attainment of which they contribute belong to subsequent courses. As the distinction between a terminal objective and an intermediate objective is not just a straightforward vocabulary exercise but, rather, is designed to identify the important skills to be acquired through a curriculum, an effort must be made to place oneself in the context of the entire curriculum in order to identify the terminal objectives being pursued. The identification of the terminal objectives makes it possible to choose and justify the intermediate objectives whereby th_ terminal objectives are to be attained, even if the latter belong to a subsequent course.

After completion of the following exercises in making a distinction between terminal objectives and intermediate objectives, we shall see how this fourth worksheet fits in with the first three.

2.4.4 Identification exercise

Put a circle round T or I to indicate whether you consider the objective to be a terminal objective or an intermediate objective.

(a) The student will be capable of assigning the relevant principal and secondary classification numbers to printed documents using the Universal Decimal Classification (UDC) table. I T

(b) The student will be capable of evaluating the importance of using working methods in information science that are proper to linguistics. I T

(c) The student will be capable of giving three examples of documentary analysis policy and procedure. I T

(d) The student will be able to explain the structure of the OSI (Open System Interconnection) model. I T

(e) The student will be able to describe the stages in the production of a promotional video for a documentation service. I T

(f) The student must be able to draw up a balance sheet of the budget of a documentary information service. I T

(g) The student must be able to locate information relevant to archives administration using the principal existing primary and secondary information sources. I T

(h) The student must be able to compare the following modes of automation: design of in-house software, acquisition of commercially available software and use of outside software as a member of an information network. I T

(i) The student will be capable of inputting a documentary search equation to a micro-computer or terminal, using the appropriate fingering. I T

2.4.5 Answers to the identification exercise

(a) T Knowledge of the Universal Decimal Classification (UDC) rules may be the subject of an intermediate objective relating to this terminal objective.

(b) T A possible intermediate objective deriving from it might be: 'The student will be capable of describing working methods proper to linguistics'.

(c) I This intermediate objective might be related to a terminal objective such as the following: 'The student will be capable of demonstrating the importance of devising policies and procedures for subject processing' or to a terminal objective concerning the ability to devise such a policy.

(d) I This intermediate objective might be related to a terminal objective such as the following: 'The student will be capable of using communications software designed in accordance with the Open System Interconnection (OSI) model'.

(e) I This intermediate objective might be attached to a terminal objective such as the following: 'The student will be capable of planning all stages in the production of a video'.

(f) T Knowledge of the various components of a balance sheet (e.g. defining assets and liabilities) may generate a number of intermediate objectives.

(g) T The intermediate objectives which might be attached to this terminal objective might include those relating to the following skills: 'identifying local, national and international primary and secondary sources of information in archives administration'; 'describing two primary and two secondary sources in archives administration'; 'enumerating local, national and international search instruments for archive services'.

(h) I This objective is a stage in making a choice of systems and software for automation of a documentation unit.

(i) I This is a possible intermediate objective for on-line bibliographical search.

2.4.6 Examples of intermediate objectives in relation to a given terminal objective

For each of the following four terminal objectives we indicate some examples of intermediate objectives which might be related to them. We suggest that you write your own example in the space given before reading those offered.

(a) The student will be capable of applying management concepts to the operation of a documentary information service.

Intermediate objective: _____

Examples of intermediate objectives

The student will be capable:

of enumerating the various management concepts;

of explaining two theories of motivation;

of comparing the theories of three authors on leadership;

of identifying the management concepts involved in the study of a given case.

(b) The student will be capable of choosing appropriate systems and software for a given documentation unit.

Intermediate objective: _____

Examples of intermediate objectives

The student will be capable:

of using the main existing sources of information with regard to documentation software;

of identifying documentation software suited to the following functions: acquisition, loan, cataloguing and control of serial publications;

of comparing the performance of documentation software identified for a given function.

(c) The student will become aware of the importance of the concept of sharing resources between documentation units.

Intermediate objective: _____

Examples of intermediate objectives

The student must be able:

to define the concept of resources sharing in regard to documentary information;

to specify the impact of the concept of resources sharing on the development of documentary information networks.

(d) The student will be capable of assessing which of the choices offered is the best conservation technique for a given collection.

Intermediate objective: _____

_____

_____

Examples of intermediate objectives

The student will be capable:

of stating the basic standards for the proper conservation of documents;

of describing conservation techniques in relation to the various types of documents to be preserved (printed and audio-visual);

of comparing, on a cost/effectiveness basis, the various possible conservation techniques for a given collection.

Note:

The examples of intermediate objectives given above must not be seen as a comprehensive list of the stages (intermediate objectives) whereby the particular terminal objective is to be attained. Furthermore, the examples of intermediate objectives related to a given terminal objective are not necessarily arranged in a learning sequence.

2.4.7 Drafting exercise

In the space given, write a terminal objective and at least one intermediate objective deriving from it.

Terminal objective: _____

_____

_____

Intermediate objective: _____

_____

_____

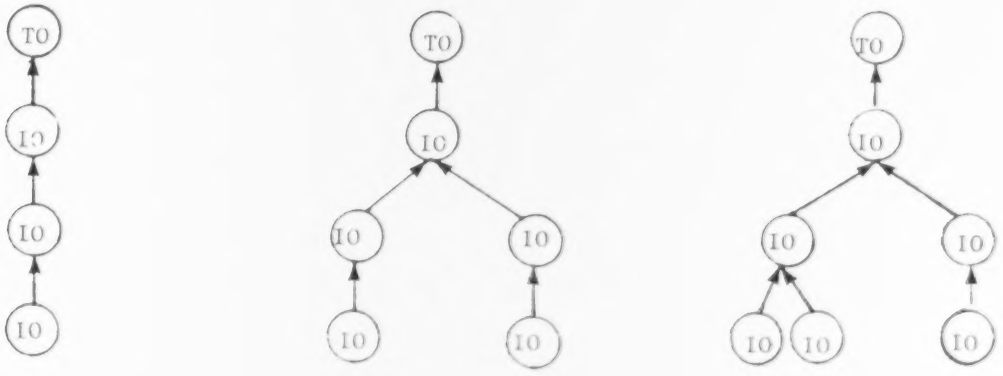
Intermediate objective: _____

_____

_____

2.4.8 Observations

By deriving intermediate objectives from a given terminal objective it is possible to arrange such intermediate objectives in sequences that are conducive to learning. A number of diagrams are given below illustrating possible sequences (IO denotes intermediate objective; TO denotes terminal objective).



However, for a number of reasons, the intermediate objectives are not always shown as a sequence. For example, it is not always easy to determine all the stages which lead to the terminal objective: in such cases what are indicated are merely those stages which have been identified.

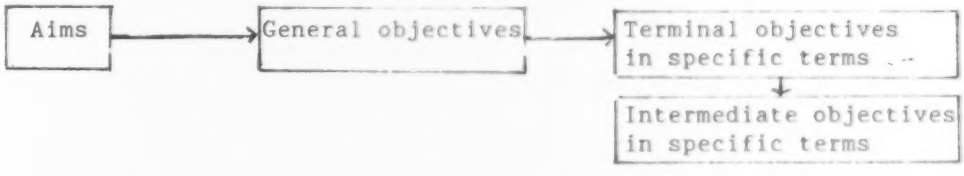
It should be noted that the terminal objective is not necessarily attained when all the intermediate objectives deriving from it have been attained: there is always a jump, one act of learning, to be completed between the last intermediate objective or objectives and the desired terminal objective.

2.4.9 Link between worksheet No. 4 and earlier worksheets

We have explained earlier in what respects worksheet No. 4 differs from the first three. We shall now indicate what they have in common.

There is a way of integrating worksheet No. 4 with the process of specifying objectives which we discussed earlier. By following the continuum suggested (in other words starting from aims and deriving general objectives from them and then clarifying the latter and making them into specific objectives) one should obtain terminal objectives (in specific terms) because one has always sought to determine the outcome of training. Having obtained terminal objectives (in specific terms), it only remains to define in specific terms the stages or the intermediate objectives for attaining these terminal objectives.

The process is illustrated in the following diagram:



For example, the following aim: 'The student of librarianship and information science must develop information management skills attuned to the needs of users' may generate various general objectives. One such objective may be as follows: 'To make the student capable of organizing an internal selective dissemination of information (SDI) service for a particular clientele'.

From this general objective a number of terminal objectives drafted in more specific terms may be derived, such as:

The student will be capable:

of identifying, by means of interviews, the precise information needs of a given clientele;

of writing the corresponding profiles and having them validated by the users concerned;

of drawing up the criteria for evaluation of the SDI service;

of setting up and operating an SDI service using the profiles identified.

For the first of these terminal objectives let us indicate some intermediate objectives which may be attached to it:

The student will be capable:

of defining the concept of information need;

of explaining the difference between a structured interview, a semi-structured interview and an unstructured interview;

of choosing the type of interview best adapted to gathering the relevant information and of explaining the reasons for the choice;

of describing the various stages in the type of interview chosen.

The terminal objectives in this example represent the chronological stages in the task of organizing a selective dissemination of information (SDI) service. Some people may have been tempted to consider the objective relating to the establishment and operation of an SDI service as being the only terminal objective and to take the preceding objectives as intermediate objectives. Even if the preceding objectives do indeed represent preliminary stages in the establishment of an SDI service it must be appreciated that such objectives represent lasting and useful skills in their own right. They are thus considered as terminal objectives.

The same would apply to an objective connected with diagnostic skills, a stage which precedes the treatment stage in the medical process. The terminal objective relating to this diagnostic skill gives rise, moreover, to a variety of intermediate objectives such as those concerning the ability to enumerate the symptoms of a particular pathological condition or the ability to identify the risk factors of a given clientele.

2.4.10 Follow-up test

Identification test

Put a circle round T or I to indicate whether the objective is terminal or intermediate.

(a) The student must be able to enumerate the principal norms relevant to subject processing and indexing languages. I T

(b) The student will be capable of applying descriptive statistics to librarianship and to information science. I T

(c) The student must be able to describe the operation of a given documentation unit. I T

(d) The student will be able to create a bibliographical data bank using a given documentary software. I T

(e) The student will be capable of planning a 'story hour' in a given children's library. I T

(f) The student will be capable of carrying out the entire range of operations required to establish communication between his microcomputer or terminal and a central unit in order to search a particular data base. I T

(g) The student will be able to describe at least two systems for classification of audio-visual documents. I T

(h) The student must be capable of stating the reason for the existence of a cataloguing network. I T

Test on writing an intermediate objective on the basis of a given terminal objective

Taking each of the objectives given below as a terminal objective, write at least one intermediate objective relating to it.

(a) The student must be capable of explaining the value of standardization in document analysis.

Intermediate objective: _____

_____

_____

Intermediate objective: _____

_____

_____

(b) The student must be able to make use of the secondary sources that are used for acquisition of audio-visual documents.

Intermediate objective: _____

_____

_____

Intermediate objective: _____

_____

_____

Drafting test

In the space given, write a terminal objective connected with your teaching work and at least one intermediate objective deriving from it.

Terminal objective: _____

_____

_____

Intermediate objective: _____

_____

_____

Intermediate objective: _____

_____

_____

2.4.11 Answers to the follow-up test

Identification test

(a) I This is a stage on the way to the application of such norms.

(b) T An intermediate objective relating to this objective might be: 'To define the concepts of mean and standard deviation'.

(c) I Such an objective may be regarded as a stage on the way to deciding whether the documentation unit ought to be automated or not.

(d) T

(e) T

(f) I This objective is a stage in making an on-line bibliographical search.

(g) I This objective is a stage on the way to choosing an existing classification system for organizing a given audio-visual holding and for using the system.

(h) I This intermediate objective might be related to a terminal objective such as the following: 'The student will be capable of deciding whether it is appropriate to participate in a given cataloguing network'.

Test on writing an intermediate objective on the basis of a given terminal objective

Here are some possible answers:

(a) The student will be capable:

of defining the concept of standardization;

of enumerating the main national and international norms relevant to document analysis;

of giving at least three reasons why it is useful to standardize documentary language.

(b) The student will be capable:

of enumerating the main secondary sources (printed and accessible on-line) used in the acquisition of audio-visual documents;

of describing the secondary sources enumerated;

of comparing the criteria for evaluation of audio-visual documents used in two given secondary sources.

Drafting test

You may consult a resource person, if necessary.

CONCLUSION

This document is designed as a means of helping teachers of librarianship, information science and archives administration to clarify their learning objectives. It is intended to be of practical use in relation to objectives rather than to make the reader a specialist in the subject.

We have insisted on the procedure to be followed in clarifying the objectives of a course: starting with the aims of the curriculum, which take into account the finalities of the educational system or the teaching establishment, the general objectives of the course are determined; the next stage is to clarify each general objective in terms of the specific objective or objectives which derive from it. Finalities, aims, general objectives and specific objectives, in that order, are the stages in the process of clarifying objectives which can be represented as forming a continuum going from the general to the specific.

For some people it is self-evident that this is the way to proceed. Unfortunately, there are many who specify their course objectives merely on the basis of an analysis of course content. Thus, they do not look critically at the content in relation to the training which the course is supposed to provide and they do not make a distinction between learning activities on the basis of their importance in relation to the aims of training. They therefore deprive themselves of the main benefits afforded by objectives. The process of clarifying objectives is intended to favour conscious choices in regard to the training which it is intended to impart to the students, and the course content and the way in which it is arranged should play a part in attaining the objectives.

Some teachers do not take naturally to thinking of objectives before suggesting means, whether it is a question of putting across a given course content, of using teaching material (book, film, software, etc.) or of choosing a teaching or learning activity (group discussion, completion of an individual project, etc.). The clarification of objectives is a discipline which a teacher should impose on himself in order to be in a position to assess the various approaches open to him in terms of the objectives sought rather than allowing his choice to be guided merely by the attractiveness of the available means.

The stage of clarifying objectives provides each teacher with an opportunity to think about the direction he wishes to give his teaching. The choices made in relation to that direction may then be justified to the students and to colleagues. It is with this in mind that we urge readers to determine their objectives.

BIBLIOGRAPHICAL REFERENCES

The bibliographical references are arranged under four subject headings:

Learning objectives (general works)

Learning objectives in librarianship, archives administration and information science

Documents consulted for the drafting of the examples in the four worksheets

Course planning

- Theory: teaching models, principles of learning, etc.
- Systems approach
- Curriculum development
- Educational methods and means
- Evaluation

LEARNING OBJECTIVES (GENERAL WORKS)

BEARD, R.M., HEALEY, F.G., HOLLOWAY, P.J., Objectives in higher education. London, Society for Research into Higher Education Ltd, 1974, 148 pp.

BLOOM, B.S. and others, Taxonomy of educational objectives: The classification of educational goals. Handbook 1. Cognitive domain. New York, McKay, 1956.

BURNS, R.W., New approaches to behavioural objectives.

DE LANDSHEERE, G., DE LANDSHEERE, V., Definigli objettivi dell'educazione. Florence, Nuova Italia, 1977.

____. Définir les objectifs de l'education. 5e éd. Paris, Presses universitaires de France, 1984, 340 pp.

____. Definir os objectivos da educacao. 4e ed. Lisbon, Moraes Editore, 1983.

____. On defining educational objectives. Oxford, Pergamon Press, 1977.

____. Sa definim objectivele educatiei. Bucarest, Editura Didactică si Pedagogica, 1978.

D'HAINAUT, L., Des fins aux objectifs: un cadre conceptuel et une méthode générale pour établir les résultats attendus (3e éd.). Bruxelles, Les Editions Labor, 1983, 491 pp.

GAGNE, R.M., 'The analysis of instructional objectives for the design of instruction', In: GLASER, R., Teaching machines and programmed learning II. Washington, Department of Audio-Visual Instruction, 1965, pp. 21-65.

GRONLUND, N.E., Stating behavioural objectives for classroom instruction. New York, Collier-MacMillan, 1970, 58 pp.

HAMELINE, D., Les objectifs pédagogiques en formation initiale et en formation continue, 5e éd. Paris, Editions ESF/Entreprise moderne d'édition, 1985, 200 pp.

HARROW, A.J., A taxonomy of the psychomotor domain. A guide for developing behavioural objectives. Longman, 1972.

KRATHWOHL, D.R., BLOOM, B.S., MASIA, B.B., Taxonomy of educational objectives - the classification of educational goals, Handbook II: affective domain. New York, McKay, 1964.

MAGER, R.F., Preparing instructional objectives, Palo Alto, Fearon, 1962, xii, 60 pp.

POCZTAR, J., La définition des objectifs pédagogiques: bases, composantes et références à ces techniques. Paris, Les éditions ESF, 1979.

POPHAM, W.J., EISNER, E., SULLIVAN, H., TYLER, L., Instructional objectives. Chicago, Rand McNally and Co., 1969. VIII - 142 pp. (AREA Monograph series on curriculum evaluation; Vol. 3).

SIMPSON, E., Educational objectives in the psychomotor domain. Eric Document Reproduction Service (Microfiche ED010368), 1966.

LEARNING OBJECTIVES IN LIBRARIANSHIP, ARCHIVES ADMINISTRATION AND INFORMATION SCIENCE

* The administrative aspects of education for librarianship: a symposium. Ed. by M.B. Cassata and H.L. Totten. Metuchen (N.J.), Scarecrow Press, 1975, 408 pp.

* BERKELEY, V.A., 'Audio-visual materials in the library: the relevance of some learning theories to the development of a new syllabus'. Journal of librarianship, Vol. 8, No. 1 (1976), pp. 33-46.

* BURRELL, T.W., 'Curriculum design and development in education for librarianship and information service'. Education for information, Vol. 1 (1963), pp. 229-261.

COOK, M., Guidelines for curriculum development in records management and the administration of modern archives: a RAMP study. Paris, Unesco, 1982, 74 pp. (PGI-82/WS/16).

* COUGER, J.D., 'Realignment of objectives in information system degree program'. In: American Federation of Information Processing Societies. National computer conference, 19-11 May 1975. Anaheim (CA), AFIPS, pp. 889-892 (AFIPS Conference Proceedings, Vol. 44).

COURRIER, Y., Besoins, stratégies et objectifs de formation dans le domaine des technologies de l'information pour les pays en développement. In: Information, Communication and Technology Transfer. E.V. Smith and S. Keenan (eds.). The Hague: FID/Elsevier Science Publishers, 1987, pp. 21-31. Also available in English: Information, technology training needs, strategies and objectives for the developing countries. International Forum on Information and Documentation, Vol. 12, No. 3 (July 1987), pp. 32-37.

* CRONIN, B., The education of library-information professionals: a conflict of objectives? London, ASLIB, 1982, 58 pp. (ASLIB Occasional Publication; No. 28).

* References marked with an asterisk denote authors who place some emphasis on learning objectives; others deal only briefly with the subject.

Curriculum change for the nineties: a report of the curriculum development project on library and information work. London, The British Library, 1983, 72 pp. (Library and Information Research Report; No. 14).

Curriculum development in librarianship and information science: proceedings of a workshop held at the College of Librarianship, Wales. London, The British Library, 1978, 148 pp. (The British Library Research and Development Reports; No. 5439).

CVELJO, K., 'Business librarianship: information services and research'. Special libraries, Vol. 70 (1979), pp. 320-327.

DA SOLEDAD VIEIRA, A., LIMA, E., 'The role of postgraduate programs in the development of national leadership in the library profession'. Revista da escola de biblioteconomia da Universidad federal de Minas Gerais, Vol. 6, No. 2 (1977), pp. 125-135 (article in Portuguese).

* DA SOLEDAD VIEIRA, A., 'The preparation of library managers: picking on UFMG's programme'. Revista da escola de biblioteconomia da Universidad federal de Minas Gerais, Vol. 6, No. 2 (1977), pp. 136-160 (article in Portuguese).

* DE BRUIN, H., 'Formulation of objectives for education in library and information science in South Africa'. South African journal of library and information science, Vol. 54, No. 1 (1986), pp. 11-15 (article in Afrikaans).

* DE OLIVERIRA CARVALHO, A., 'Postgraduation in librarianship and information science: reflections, suggestions and experiences'. Revista de escola de biblioteconomia da Universidad federal de Minas Gerais, Vol. 7, No. 2 (1978), pp. 289-309 (article in Portuguese).

* 'Fondements du programme d'information documentaire de l'Ecole de bibliothéconomie de l'Université de Montréal'. Argus, Vol. 7, No. 2 (1978), pp. 54-56.

GRIFFITHS, J.M., New directions in library and information sciences education. Final report: Current and future competencies for librarians and information specialists. Rockville (MD), King Research, 1985, 376 pp.

* GROVER, R., 'Library and information professional education for the learning society: a model curriculum'. Journal of education for library and information science, Vol. 26, No. 1 (Summer 1985), pp. 33-45.

GUY, R.F., LARGE, J.A., 'On-line bibliographic searching in the library school curriculum'. Library review, Vol. 30 (Spring 1981), pp. 27-34.

HALL, A., An analysis of certain professional library occupations in relation to formal educational objectives. Final report. Pittsburgh, Carnegie Library of Pittsburgh, 1986, 158 pp.

* HANNABUSS, S., 'The role of instructional objectives in curriculum design'. Education libraries bulletin, Vol. 27, No. 3 (Autumn 1984), pp. 12-21.

HARNETT, M., 'A course that stands out from the rest'. Australian library journal, Vol. 25, No. 3 (April 1976), pp. 111-115.

* References marked with an asterisk denote authors who place some emphasis on learning objectives; others deal only briefly with the subject.

* HARTER, S.T., 'An assessment of instruction provided by library schools in on-line searching'. Information processing and management, Vol. 15 (1979), pp. 71-75.

HEGAZY, O., AL-AKABAOUI, M.S., BOSHRA-RIAD, M., 'Proposed curriculum for information science education in developing countries environment'. In: Computers in education. Proceedings of the IFIP TC-3 world conference on computers in education, Lausanne, 27-31 July 1981. Amsterdam, North-Holland Publishing Co., 1981. XVIII - 876 pp.

* ISAAC, K.A., 'Need for new directions in library education'. Journal of library and information science (India), Vol. 1, No. 1 (1976), pp. 21-32.

* KAZLAUSKAS, E.J., 'The application of the instructional development process to a module on flowcharting'. Journal of library automation, Vol. 9, No. 3 (September 1976), pp. 234-244.

* KENT, A., 'Objectives for information science education'. Bulletin of the American Society for Information Science. Vol. 3, No. 6 (1977), pp. 14-15.

LANCASTER, F.W., Guidelines for the evaluation of training courses. Workshops and seminars. 2nd edition. Paris, Unesco, September 1983, 129 pp. (BEP/83/111).

* LARGE, J.A., A modular curriculum in information studies. Paris, Unesco, 1987, 89 pp. (PGI-87/WS/5).

* McKEE, B., 'Information studies: towards an academic discipline'. Library Association record, Vol. 88, No. 5 (1986), pp. 236-239.

MILLER, E.P., GOODYEAR, M.L., 'Training for interpersonal relations in the information transfer process'. In: Communication information. Proceedings of the ASIS 43rd annual meeting, Anaheim (CA), 5-10 October 1980. White Plains (NY), Knowledge Industry Publications, 1980, pp. 285-287.

* OCHS, M., 'A taxonomy of qualifications for music librarianship: the cognitive domain'. Notes, Vol. 33, No. 1 (1976), pp. 27-44.

PREVOT, M., WALLER, S., et coll., 'Systèmes modulaires de formation: application à l'information et à la documentation'. DOCUMENTALISTE, Vol. 24, No. 1 (July-October 1987), pp. 186-189.

* PRYTHERCH, R.J., 'Towards an understanding and evaluation of student fieldwork in libraries'. Journal of education for librarianship, Vol. 22, No. 3 (Winter 1982), pp. 173-186.

* PUTNAM, W., Problems and issues in specifying behavioural instructional objectives for graduate courses in library administration. Washington (DC), Catholic University of America, 1970, 46 pp. (MS thesis).

* REED, M.A., 'Local history at Loughborough'. Journal of education for librarianship, Vol. 16, No. 2 (1975), pp. 95-104.

* REICHER, D., LAJEUNESSE, M., 'Le nouveau programme de maîtrise à l'Ecole de bibliothéconomie: genèse et organization'. Argus, Vol. 8, No. 3-4 (1979), pp. 43-48.

* References marked with an asterisk denote authors who place some emphasis on learning objectives; others deal only briefly with the subject.

SARACEVIC, T., A course in information consolidation: a handbook for education and training in analysis, synthesis and repackaging of information (preliminary version). Paris, Unesco, 1986, 128 pp. (PGI-88/WS/14).

* SAUNDERS, W.L., Postgraduate training for information specialists. Paris, Unesco, 1964, 97 pp. (PGI/84/164 prov.).

* VAN BRAKEL, P.A., BOOM, J.A., 'Structural changes to the basic degree courses in information science and library science'. South African journal of library and information science, Vol. 54, No. 1 (1986), pp. 16-25 (article in Afrikaans).

VICKERY, B.C., The use of on-line search in teaching. An assessment of projects carried out by UK schools of library and information studies. London, The British Library, May 1977, 44 pp. (British Library. Research and development reports; No. 5390).

*VOGEL, E., 'Information management and education in information science. Part one: Information management in public administration - concepts, professional roles, qualifications. Part two: Information science studies - aims, contents, recommendations'. Nachrichten fuer documentation, Vol. 37, No. 2 (1986), pp. 79-92 and Vol. 37, No. 3 (1986) pp. 151-161.

WATSON, D.G., Guideline for the organization of short courses and workshops on the dissemination of data in science and technology. Paris, Unesco, 1986, 74 pp. (PGI-86/WS/11).

WILSON, T.D., Guidelines for developing and implementing a national plan for training and education in information use. Paris, Unesco, 1980, 50 pp. (PGI-80/WS/28).

YOUNG-SUN SONG, Harmonization problems in library and information science education. Loughborough, Loughborough University of Technology, Department of Library and Information Studies, 1980, 82 pp. (MA thesis).

DOCUMENTS CONSULTED FOR THE DRAFTING OF THE EXAMPLES IN THE FOUR WORKSHEETS

ASSOCIATION INTERNATIONALE DES ECOLES DES SCIENCES DE L'INFORMATION. Répetoire des écoles d'expression française des sciences de l'information, 2e éd, Montréal, AUPELF, 1985, 328 pp.

ATHERTON, P., Guidelines for the organization of training courses, workshops and seminars in scientific and technical information and documentation. Paris, Unesco, 1975, 88 pp. (SC-75/WS/29).

COOK, M. Guidelines for curriculum development in records management and the administration of modern archives: a RAMP study. Paris, Unesco, 1982, 74 pp. (PGI-82/WS/16).

DAVINSON, D., ROBERTS, N., 'Developments in information education and their implication for school librarianship and information studies in the United Kingdom'. Journal of documentation, Vol. 42, No. 1 (1986), pp. 1-10.

ECOLE DE BIBLIOTHECONOMIE ET DE SCIENCES DE L'INFORMATION. Montréal. Certificat en archivistique. Montréal, Université de Montréal, dépliant s.d.

* References marked with an asterisk denote authors who place some emphasis on learning objectives; others deal only briefly with the subject.

ECOLE DE BIBLIOTHECONOMIE ET DES SCIENCES DE L'INFORMATION. Montréal. Guide de l'étudiant 1986-1987. Montréal, Université de Montréal, 142 pp.

_____. Programme de maîtrise 1986-1987. Montréal, Université de Montréal, 1986, 14 pp.

FACULTY OF LIBRARY AND INFORMATION SCIENCE. Toronto. Calendar 1986-1987. Toronto, University of Toronto, 1986, 34 pp.

_____. Education for the information profession. Toronto, University of Toronto, brochure n.d.

FISHBEIN, M.H., A model curriculum for the education and training of archivists in automation: a RAMP study. Paris, Unesco, 1985, 34 pp. (PGI-85/WS/27).

GRADUATE SCHOOL OF LIBRARY AND INFORMATION STUDIES. Montréal. Calendar for session 1987-1988. Montréal, McGill University, 1987, 24 pp.

HALL, N., Teachers, information and school libraries. Paris, Unesco, 1986, 110 pp. (PGI-86/WS/17).

IRVING, A., Instructional materials for developing information concepts and information-handling skills in schoolchildren: an international study. Paris, Unesco, November 1981, 64 pp. (PGI-81/WS/32).

KATHPALIA, Y.P. A model curriculum for the training of specialists in document preservation and restoration: a RAMP study with guidelines. Paris, Unesco, 1984, vi, 31 pp. (PGI-84/WS/2).

LANCASTER, F.W., Guidelines for the evaluation of training courses, workshops and seminars. 2nd edition. Paris, Unesco, September 1983, 129 pp. (BEP/83/111).

LARGE, J.A., A modular curriculum in information studies. Paris, Unesco, 1987, 89 pp. (PGI-87/WS/5).

McKEE, B., 'Information studies: towards an academic discipline'. Library Association record, Vol. 88, No. 5 (1986), pp. 236-239.

MOORE, N., Guidelines for conducting information manpower surveys. Paris, Unesco, 1986, 2 vols., 92 - 34 pp. (PGI-86/WS/3).

NEELAMEGHAN, A., Guidelines for formulating policy on education, training and development of library and information personnel. Paris, Unesco, 1978, 38 pp. (PGI-78/WS/29).

PARKER, J.S., Library and information science and archive administration: a guide to building up a basic collection for library schools. Paris, Unesco, 1984, 148 pp. (PGI-84/WS/11).

QUEBEC. Commission d'étude sur la formation des adultes. Un project d'éducation permanente: résumé. Québec, Ministère de l'Education, 1984, 16 pp.

_____. Ministère de l'Education. L'école québécoise: énoncé de politique et plan d'Action. Québec, Editeur officiel du Québec, 1979, 164 pp.

Report of the transbinary group on librarianship and information studies (Great Britain). (London), June 1986, 130 pp.

SABOR, J., Methods of teaching librarianship. Paris, Unesco, 1969, 154 pp. (Unesco Manuals for Libraries: No. 16).

SARACEVIC, T., A course in information consolidation: a handbook for education and training in analysis, synthesis and repackaging of information (preliminary version). Paris, Unesco, 1986, 128 pp. (PGI-86/WS/14).

SAUNDERS, W.L., Guidelines for curriculum development in information studies. Paris, Unesco, 1978, 38 pp. (PGI-78/WS/27).

_____. Postgraduate training for information specialists. Paris, Unesco, 1984, 97 pp. (PGI/84/164 prov.).

SCHOOL OF LIBRARY AND INFORMATION SCIENCE. London (Ont.). 1986-1988. London (Ont.), The University of Western Ontario, 1986, 52 pp.

THOMPSON. A.H., Guide to the production and use of audio-visual aids in library and information science teaching. Paris, Unesco, 1983, 125 pp. (PGI-83/WS/17).

TYLER, R.W., 'Program evaluation'. International journal of educational research, Vol. 10, No. 1 (1986), pp. 53-67.

WESLEY-TANASKOVIC, I., Principes directeurs relatifs aux politiques nationales de l'information: portée, formulation et mise en oeuvre. Paris, Unesco, 1985, 64 pp. (PGI-85/WS/14).

WATSON, D.G., Guidelines for the organization of short courses and workshops on the dissemination of data in science and technology. Paris, Unesco, 1986, 74 pp. (PGI-86/WS/11).

WIEGAND, W.A., 'Perspective on library education in the context of recently published literature on the history of professions'. Journal of education for library and information science, Vol. 26, No. 4 (1986), pp. 267-280.

WILSON, T.D., Guidelines for developing and implementing a national plan for training and education in information use. Paris, Unesco, 1980, 50 pp. (PGI-80/WS/28).

COURSE PLANNING

Theory: teaching models, principles of learning, etc.

BERTRAND, Y., Les modèles éducationnels. Montréal, Service pédagogique de l'Université de Montréal, 1979, 72 pp.

BERTRAND, Y., VALOIS, P., Les options en éducation. Québec, Ministère de l'Education, 1980, 471 pp.

BUTLER, F.C., 'The teaching/learning process: a unified interactive model (part one; part two; part three)'. Educational technology. Vol. 25, No. 9 (September 1985), pp. 9-17; No. 10 (October 1985), pp. 7-17; No. 11 (November 1985), pp. 7-17.

GAGNE, R.M., Essentials of learning for instruction: Expanded edition. New York, Holt, Rinehart and Wilson, 1975, 204 pp.

JOYCE, B., WEIL, M., Models of teaching. (3rd ed.). New York, Prentice-Hall, 1986, IX - 518 pp.

LA GARANDERIE, A. de, Les profils pédagogiques: discerner les aptitudes scolaires. Paris, Le Centurion, 1980, 259 pp.

MACKENZIE, N., ERAUT, M., JONES, H.C., Art d'enseigner et art d'apprendre. Paris, Unesco et Association internationale des universites, 1971, 236 pp.

Systems approach

BRIGGS, L.J., WAGER, W.W., Handbook of procedures for the design of instruction (2nd ed.). Englewood Cliffs (N.J.), Educational Technology Publications, 1981.

DAVIES, K., L'art d'instruire (The management of learning, traduit par G. Gavillet). Paris, Editions Hommes et Techniques, 1976, 247 pp.

GAGNE, R.M., BRIGGS, L.J., Principles of instructional design (2nd ed.). New York, Holt, Rinehart and Winston, 1979, X - 221 pp. Unesco, L'educateur et l'approche systémique: manuel pour améliorer la pratique de l'éducation dans les pays en voie de développement. Paris, Presses de l'Unesco, 1976, 207 pp.

Curriculum development

SAUNDERS, W.L., Guidelines for curriculum development in information studies. Paris, Unesco, 1978, 38 pp. (PGI-78/WS/27).

COOK, M., Guidelines for curriculum development in records management and the administration of modern archives: a RAMP study. Paris, Unesco, 1982, 74 pp. (PGI-82/WS/16).

Educational methods and means

GAGNON, M., ROLAND, J., Le cours magistral. Montréal, Service pédagogique de l'Université de Montréal, 1982, 62 pp.

MUCCHIELLI, R., La dynamique des groupes: connaissance du problème, applications pratiques. 9e éd. révisée et augmentée. Paris, Libraries Techniques. Entreprise Moderne d'édition, 1980, 110-73-6 pp.

_____. La méthode des cas: connaissance du problème, applications pratiques à l'usage des psychologues, des animateurs et des responsables. 4e éd. Paris, Libraries Techniques, 1976, 72-12-83 pp.

SABOR, J.E., Methods of teaching librarianship. Paris, Unesco, 1969, 154 pp. (Unesco Manuals for Libraries, No. 16).

THOMPSON, A.H., Guide to the production and use of audio-visual aids in library and information science teaching. Paris, Unesco, 1983, 125 pp. (PGI-83/WS/17).

TOURNIER, M., Typologie des formules pédagogiques. Québec, Ministère de l'Education, D.G.E.C., 1978, 267 pp.

VIAL, J., Histoire et actualité des méthodes pédagogiques. Paris, ESF, 1982, 206 pp. (Science de l'éducation).

Evaluation

ALLAL, L., CARDINET, J., PERRANOUD, P., L'évaluation formative dans un enseignement différencié: Actes du colloque à l'Université de Genève, mars 1978 (2e ed.), Berne, Peter Lang, 1981, 223 pp. (Collection Exploration).

BERNARD, H., FONTAINE, F., Les questions à choix multiple: guide pratique pour le rédaction, l'analyse et la correction. Montréal, Service pédagogique de l'Université de Montréal, 1982, 166 pp.

BIRZEA, C., La pédagogie du succès. Paris, Presses Universitaires de France, 1982, 152 pp.

BLOOM, B.S., HASTINGS, J.T., MADAUS, G.F., Handbook on formative and summative evaluation of student learning. New York, McGraw-Hill Inc., 1971, 924 pp.

BLOOM, B.S., Stability and change in human characteristics, London, New York, Sydney, John Wiley and Sons Inc., 1964, xiv, 237 pp.

DE LANDSHEERE, G., Dictionnaire de l'évaluation et de la recherche en éducation. Paris, Presses universitaires de France, 1979, VIII - 340 pp.

FONTAINE, F., (Ed.), Dossier sur l'évaluation. Montréal, Service pédagogique de l'Université de Montréal, 1979, 140 pp.

FONTAINE, F., Que peuvent nous dire le résultats à un examen? dans: H. Bernard et F. Fontaine: Les questions à choix multiple: guide pratique pour la rédaction, l'analyse et la correction. pp. 141-157. Montréal, Service pédagogique de l'Université de Montréal, 1982, 166 pp.

GRONDLUND, E.N., Measurement and evaluation in teaching (3rd ed.), New York, Macmillan Publishing Co., 1978, 590 pp.

LANCASTER, S.W., Guidelines for the evaluation of training courses, workshops and seminars (2nd ed.), Paris, Unesco, 1983, 129 pp. (BEP/83/111).

ANNEX I

CORRESPONDENCE BETWEEN LEVELS OF TRAINING

These categories concerning levels of training have been established for the purposes of international comparison by the International Federation of Library Associations and Institutions (IFLA). Some possible equivalences are given below as examples. For further details please refer to the original publication.[1]

Post-secondary education:	colleges providing university entrance vocational studies
Brazil	Bachelor's degree (in certain schools)
Canada	Diplôme d'études collégiales en techniques de la documentation (Quebec) [college diploma in documentation techniques]
France	Certificat d'aptitude aux fonctions de bibliothécaire (CAFB) [certificate of librarianship]
Poland	Diploma in librarianship or in information science
Senegal	Diplôme d'aptitude aux fonctions de bibliothécaire (DAFB) [diploma in librarianship]
	Diplôme d'aptitude aux fonctions d'archiviste (DAFA) [diploma in archiving]
	Diplôme d'aptitude aux fonctions de documentaliste (DAFC) [diploma in documentation]
Tertiary education:	first-level university studies, university college
Brazil	Bachelor's degree (in certain schools)
	Licentiate degree
	Master's degree (in certain schools)
Canada	Certificate in archives administration
France	Diplôme universitaire de technologie (DUT) [university diploma in technology]
	Diplôme d'études universitaires générales (DEUG) [diploma in general university studies]
	Licence [licentiate degree]

1. International guide to library and information science education, K.G. Saur, Munich, New York, London, Paris. 1985, 537 pp. (IFLA, publications 32).

Morocco	Diploma in information science
	Licentiate degree
Poland	Master's degree (certain schools)
Tunisia	Master's degree in documentation, libraries and archives (first level)
United Kingdom	Bachelor of arts
United States	Bachelor's degree
Venezuela	Bachelor's degree
Post-tertiary education:	second and third university levels
Canada	Master's degree
	Doctorate (Ph.D./Doctor of philosophy)
France	Maîtrise (Master's degree)
	Diplôme d'études approfondies (DEA) [postgraduate diploma]
	Diplôme d'études supérieures spécialisées (DESS) [diploma in specialized postgraduate studies]
	Diplôme supérieure de bibliothécaire [postgraduate diploma in librarianship]
	Doctorate (third level)
	Doctorat d'Etat
Poland	Diploma in librarianship and information science
	Master's degree (certain schools)
Tunisia	Master's degree in documentation (second level)
United Kingdom	Diploma in librarianship and information science
	Master of arts
	Doctorate
United States	Master's degree
	Doctorate (Ph.D./Doctor of philosophy; D.L.S./Doctor of library science)

ANNEX II

EXAMPLE OF AN ANALYSIS GRID FOR COGNITIVE OBJECTIVES

Objective	Taxonomic level	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
No. 1		8%	-	-	-	-	-
No. 2		-	-	4%	-	-	-
No. 3		-	-	12%	-	-	-
No. 4		-	10%	-	-	-	-
No. 5		-	-	-	-	8%	-
No. 6		-	-	-	-	4%	-
No. 7		-	4%	-	-	-	-
No. 8		-	-	-	16%	-	-
No. 9		-	-	-	8%	-	-
No. 10		-	-	-	-	14%	-
No. 11		-	-	12%	-	-	-
TOTAL		8%	14%	28%	24%	26%	-

The figure of 8 per cent assigned to objective No. 1 in relation to knowledge is determined by the importance of the objective for the course (e.g. each hour of course time represents a little over 2 per cent of a course of 45 hours). In the example illustrated here, for a course having 11 objectives, the evaluation level is not represented by any objective whereas a figure of 28 per cent is assigned to the application level.

ANNEX III

INSTRUMENTATION OF BLOOM'S TAXONOMY FOR THE COGNITIVE AND AFFECTIVE DOMAINS[1]

In order to facilitate the operational use of objectives in a more concrete way, N. Metfessel, W. Michael and D. Kirsner[1] provide a table in which, opposite each taxonomic category, there is a list of verbs and a list of direct objects which, when suitably combined, yield the basic structure of an operational objective ('ability' or 'able' being inserted before each of the infinitives).

COGNITIVE DOMAIN

Taxonomy classification		KEY WORDS	
		Examples of infinitives	Examples of direct objects
1.00	Knowledge		
1.10	Knowledge of specifics		
1.11	Knowledge of terminology	to define, to distinguish, to acquire, to identify, to recall, to recognize	vocabulary, terms, terminology, meaning(s), definition, referents, elements
1.12	Knowledge of specific facts	to recall, to recognize, to acquire, to identify	facts, factual information, (sources), (names), (dates), (events), (persons), (places), (time periods), properties, examples, phenomena
1.20	Knowledge of ways and means of dealing with specifics		
1.21	Knowledge of conventions	to recall, to identify, to recognize, to acquire	form(s), conventions, uses, usage, rules, ways, devices, symbols, representations, style(s), format(s)

1. This table is from METFESSEL, N., MICHAEL, W. and KIRSNER, D., 'Instrumentation of Bloom's and Kratwohl's taxonomies for the writing of educational objectives' as quoted in R. KIBLER and others, Behavioural objectives and instruction, Boston, Allyn and Bacon, 1970.

Taxonomy classification		KEY WORDS: Examples of infinitives	KEY WORDS: Examples of direct objects
1.22	Knowledge of trends, sequences	to recall, to recognize, to acquire, to identify	action(s), processes, movement(s), continuity, development(s), trend(s), sequence(s), causes, relationship(s), forces, influences
1.23	Knowledge of classifications and categories	to recall, to recognize, to acquire, to identify	area(s), type(s), feature(s), class(es), set(s), division(s), arrangement(s), classification(s), category/categories
1.24	Knowledge of criteria	to recall, to recognize, to acquire, to identify	criteria, basics, elements
1.25	Knowledge of methodology	to recall, to recognize, to acquire, to identify	methods, techniques, approaches, uses, procedures, treatments
1.30	Knowledge of the universals and abstractions in a field		
1.31	Knowledge of principles, generalizations	to recall, to recognize, to acquire, to identify	principle(s), generalization(s), proposition(s), fundamentals, laws, principal elements, implication(s)
1.32	Knowledge of theories and structures	to recall, to recognize, to acquire, to identify	theories, bases, interrelations, structure(s), organization(s), formulation(s)
2.00	Comprehension		
2.10	Translation	to translate, to transform, to give in own words, to illustrate, to prepare, to read, to represent, to change, to rephrase, to restate	meaning(s), sample(s), definitions, abstractions, representations, words, phrases

Taxonomy classification		KEY WORDS Examples of infinitives	Examples of direct objects
2.20	Interpretation	to interpret, to reorder, to rearrange, to differentiate, to distinguish, to make, to draw, to explain, to demonstrate	relevancies, relationships, essentials, aspects, new view(s), qualifications, conclusions, methods, theories, abstractions
2.30	Extrapolation	to estimate, to infer, to conclude, to predict, to differentiate, to determine, to extend, to interpolate, to extrapolate, to fill in, to draw	consequences, implications, conclusions, factors, ramifications, meanings, corollaries, effects, probabilities
3.00	Application	to apply, to generalize, to relate, to choose, to develop, to organize, to use, to employ, to transfer, to restructure, to classify	principles, laws, conclusions, effects, methods, theories, abstractions, situations, generalizations, processes, phenomena procedures
4.00	Analysis		
4.10	Analysis of elements	to distinguish, to detect, to identify, to classify, to discriminate, to recognize, to categorize, to deduce	elements, hypothesis/hypotheses, conclusions, assumptions, statements (of fact), statements (of intent), arguments, particulars
4.20	Analysis of relationships	to analyse, to contrast, to compare, to distinguish, to deduce	relationships, interrelations, relevance, relevancies, themes, evidence, fallacies, arguments, cause-effects, consistency/consistencies, parts, ideas, assumptions
4.30	Analysis of organizational principles	to analyse, to distinguish, to detect, to deduce	form(s), pattern(s), purpose(s), point(s) of view(s), techniques, bias(es), structure(s), theme(s), arrangement(s), organization(s)

Taxonomy classification		KEY WORDS: Examples of infinitives	KEY WORDS: Examples of direct objects
5.00	Synthesis		
5.10	Production of a unique communication	to write, to tell, to relate, to produce, to constitute, to transmit, to originate, to modify, to document	structure(s), patterns, product(s), performance(s), design(s), work(s), communications, effort(s), specifics, composition(s)
5.20	Production of a plan, or proposed set of operations	to propose, to plan, to produce, to design, to modify, to specify	plan(s), objectives, specification(s), schematic(s), operations, way(s), solution(s), means
5.30	Derivation of a set of abstract relations	to produce, to derive, to develop, to combine, to organize, to synthesize, to classify, to deduce, to develop, to formulate, to modify,	phenomena, taxonomies, concept(s), scheme(s), theories, relationships, abstractions, generalizations, hypothesis/hypotheses, perceptions, ways, discoveries
6.00	Evaluation		
6.10	Judgments in terms of internal evidence	to judge, to argue, to validate, to assess, to decide	accuracy/accuracies, consistency/consistencies, fallacies, reliability, flaws, errors, precision, exactness
6.20	Judgements in terms of external criteria	to judge, to argue, to consider, to compare, to contrast, to standardize, to apprise	ends, means, efficiency, economy/economies, utility, alternatives, courses of action, standards, theories, generalizations
		AFFECTIVE DOMAIN	
1.0	Receiving		
1.1	Awareness	to differentiate, to separate, to set apart, to share	sights, sounds, events, designs, arrangements

Taxonomy classification		KEY WORDS Examples of infinitives	Examples of direct objects
1.2	Willingness to receive	to accumulate, to select, to combine, to accept	models, examples, shapes, sizes, meters, cadences
1.3	Controlled or selected attention	to select, to posturally respond to, to listen (for), to control	alternatives, answers, rhythms, nuances
2.0	Responding		
2.1	Acquiescence in responding	to comply (with), to follow, to commend, to approve	directions, instructions, laws, policies, demonstrations
2.2	Willingness to respond	to volunteer, to discuss, to practise, to play	instruments, games, dramatic works, charades, burlesques
2.3	Satisfaction in response	to applaud, to acclaim, to spend leisure time in, to augment	speeches, plays, presentations, writings
3.0	Valuing		
3.1	Acceptance of a value	to increase measured proficiency in, to increase numbers of, to relinquish, to specify	group membership(s), artistic production(s), musical productions, personal friendships
3.2	Preference for a value	to assist, to subsidize, to help, to support	artists, projects, viewpoints, arguments
3.3	Commitment	to deny, to protest, to debate, to argue	deceptions, irrelevancies, abdications, irrationalities
4.0	Organization		
4.1	Conceptualization of a value	to discuss, to theorize (on), to abstract, to compare	parameters, codes, standards, goals
4.2	Organization of a value system	to balance, to organize, to define, to formulate	systems, approaches, criteria, limits

Taxonomy classification		KEY WORDS: Examples of infinitives	KEY WORDS: Examples of direct objects
5.0	Characterization by value or value complex		
5.1	Generalized set	to revise, to change, to complete, to require	plans, behaviour, methods, effort(s)
5.2	Characterizations	to be rated high by peers in, to be rated high by superiors in, to be rated high by subordinates in	humanitarianisms, ethics, integrity, maturity
		and	
		to avoid, to manage, to resolve, to resist	extravagance(s), excesses, conflicts, exorbitance/exorbitancies

GLOSSARY

Aim

Statement which defines the long-term orientation of a particular curriculum.

Criterion-based frame of reference

The evaluation process requires a frame of reference for interpreting the information compiled. The criterion-based frame of reference provides a means of determining how advanced the student's learning is in relation to what it should be (criterion, objective to be attained). An objective such as: 'To be able to type a text of 500 words without mistakes at a speed of 70 words a minute' can be evaluated within a frame of reference related to a criterion. The student's achievement is compared to this criterion rather than to the performance of class companions and such evaluation, known as criterion-referenced evaluation, therefore differs from an evaluation within a 'normative' frame of reference.

'Ex post facto' evaluation

The aim of ex post facto evaluation is to make a definitive judgement on what the student has achieved at the end of a learning sequence, of part of a course, of an entire course or of a curriculum. Such a judgement is thus relevant to decision-making connected with promotion, certification, the end-of-study diploma or the classification of students.

Finality

Statement which reflects a philosophy, principles, a world view or a system of values and which indicates, in a very general way, the guidelines of an educational system or establishment.

General objectives

Statement, in more or less precise terms, of the trend of the learning activity. The statement, which defines the outcome of the learning activity, represents a particular point in the general orientation of a curriculum. (The general objective is the first level of specification of the aim from which it derives.)

Intermediate objectives

Statement which indicates, within a sequence of various items of learning, an item which the subject must master before the terminal objective is attained. (Intermediate objectives may be general or specific but they are used as a means of attaining a terminal objective. They are objectives which apply during the learning process.)

Item bank

A set of items (test questions) classified according to a system which enables questionnaires with predetermined characteristics to be drawn up. For example, items may be classified in terms of their psychometric characteristics (difficulty, discrimination, etc.) and of the objectives sought.

Mastery learning

Mastery learning is a concept described by Bloom (1971). It is based on the premise that what differentiates students is their individual speed of learning and that most of them (probably over 90 per cent) are capable of successfully completing a given course. One must therefore identify the items of learning in the curriculum which all students are supposed to master, specify the criteria that determine competence and verify, by means of evaluation using a benchmark frame of reference, that those criteria have been satisfied. In order to make it easier for the student to attain the objectives, the learning must be tailored to the individual student by enabling him to use a variety of means. Ongoing evaluation is one of these means.

Normative frame of reference

In order to interpret the information compiled on the subject of a student's learning, his results are compared to those obtained by one or more groups of students. The student is ranked in relation to the other students, for example those in his class.

An illustration of this type of interpretation is where a comparison is made between the marks obtained by a student, for example 70 per cent, and the average obtained by the group. The assessment made of the student's performance will differ depending on whether the group average is 50 per cent or 85 per cent. Additional information may, however, be needed concerning the distribution of the results of the group around the mean so as to make a better informed judgement (for example the variance or standard deviation of the scatter of marks).

Ongoing evaluation

The aim of ongoing evaluation is to facilitate progressive learning. It thus takes place during the learning process so that action of an educational kind can be initiated as soon as the diagnosis is made. Various types of remedial or more exacting work may be prescribed depending on the information compiled.

Such evaluation is an integral part of the educational process: the student learns through the evaluation which provides him with feedback on his own learning difficulties.

Specific objectives

Statement which describes the trend of the learning activity. It is formulated in terms of observable behaviour. (It is an interpretation of the general objective from which it derives.)

Taxonomy of objectives

Hierarchical classification of objectives in terms of one or more explicit criteria. The taxonomy of Bloom and colleagues is one of the best known.

Terminal objective

Statement of a lasting and intrinsically useful skill which the subject must have acquired at the end of a particular learning activity. (This skill may be described in general or specific terms; in other words, one may have general terminal objectives and specific terminal objectives.)

PGI STUDIES AND DOCUMENTS IN THE FIELD

OF EDUCATION AND TRAINING

ATHERTON, P. - Guidelines for the organization of training courses, workshops and seminars in scientific and technical information and documentation. - Paris : Unesco, 1975. - 88 p. - (SC-75/WS/29). Also available in French and Spanish

ATHERTON, P. - Handbook for information systems and services. - Paris : Unesco, 1977. - 259 p. (ISBN 92-3-101457-9). Also available in French, Russian and Spanish

COCHRANE, P. - User based information services. A slide-tape presentation. Paris : Unesco, 1987. - (PGI-86/WS/27). Out of stock.

COOK, M. - Guidelines on curriculum development in information technology for librarians, documentalists and archivists. - Paris : Unesco, 1986. - 123 p. - (PGI-86/WS/26). Available in Spanish. French version in preparation

COOK, M. - Guidelines for curriculum development in records management and the administration of modern archives : a RAMP study. - Paris : Unesco, 1982. - 74 p. (PGI-82/WS/16). Also available in French and Spanish

EVANS, A.J., RHODES, R.G., KEENAN, S. - Education and training of users of scientific and technical information : UNISIST Guide for teachers. - Paris : Unesco, 1977. - 143 p. (ISBN 92-3-101452-5). Also available in French, Russian and Spanish

FISHBEIN, M.H. - A Model curriculum for the education and training of archivists in automation : a RAMP study. - Paris : Unesco, 1985. - 33 p. (PGI-85/WS/27). Includes a bibliography. Also available in Spanish

FONTAINE, F., BERNHARD, P. - Principes directeurs pour la rédaction d'objectifs d'apprentissage en bibliothéconomie, sciences de l'information et archivistique. Paris: Unesco, 1988 (PGI-88/WS/10).

GUINCHAT, C., MENOU, M. - Introduction générale aux sciences et techniques de l'information et de la documentation. - Paris : les Presses de l'Unesco, 1981. - 402 p. (ISBN 92-3-201860-80). Also available in English, Spanish, Arab and Chinese. Revised version in preparation. Price: 90 FF

HALL, N. - Teachers, information and school libraries. - Paris : Unesco, 1986. - 110 p. (PGI-86/WS/17). Also available in Spanish.

HARMONIZATION of training in librarianship, information science and archives. - Paris : Unesco, 1987. - 13 p. - (PGI-87/WS/2). Also available in French and Spanish

HARRIS, C. - Training package on information and documentation. - Paris : Unesco, 1987. - (PGI-86/WS/28). Only limited number of copies available

INTERNATIONAL Symposium on harmonization of education and training programmes in information science, librarianship and archival studies. Unesco House, Paris, 8-12 October 1984. Final Report. - Paris : Unesco, 1984. - 13 p. (PGI/E.T./HARM. II/80). Also available in French

KATHPALIA, Y.P. - A Model curriculum for the training of specialists in document preservation and restoration : a RAMP study with guidelines. - Paris: Unesco, 1984. - vi, 31 p. (PGI-84/WS/2). Also available in French and Spanish

LANCASTER, F.W. - Guidelines for the evaluation of training courses, workshops and seminars in scientific and technical information and documentation. - Paris: Unesco, 1975. - 102 p. (SC-75/WS/44). Also available in French and Spanish

LANCASTER, F.W. - Guidelines for the evaluation of training courses, workshops and seminars (second edition). - Paris: Unesco, 1983. - 129 p. (BEP/83/III). English only

LARGE J.A. - A Modular curriculum in information studies. - Paris: Unesco, 1987. - 89 p. (PGI-87/WS/5). French and Spanish versions in preparation

MODERN archives administration and records management: a RAMP reader compiled by Peter Walne with the assistance of a working group of the International Council on Archives. - Paris: Unesco, 1985. - 587 p. (PGI-85/WS/32). Also available in French and Spanish

MOORE, N. - Guidelines for conducting information manpower surveys; Vol. I The Manual; Vol.II Questionnaires and accompanying documents. - Paris: Unesco, 1986. - 88, 34 p. (PGI-86/WS/3). Also available in French and Spanish

NEELAMEGHAN, A. - Guidelines for formulating policy on education, training and development of library and information personnel. - Paris: Unesco, 1978. - 38 p. (PGI-78/WS/29). Also available in French and Spanish

NEWSLETTER on education and training programmes for information personnel. Published by FID under Unesco contract. - The Hague: FID, 1979-

PARKER, J.S. - Library and information science and archive administration: a guide to building up a basic collection for library schools. - Paris: Unesco, 1984. - 148 p. (PGI-84/WS/11). English only

REGISTER of short-term education and training activities in librarianship, information science and archives / Inventaire des activités de formation de brève durée dans le domaine de la bibliothéconomie, des sciences de l'information et de l'archivistique / Inventario de las actividades de formacion de breva duracion en la esfera de la bibliotecologia, las ciencias de la informacion y la archivologia / Second edition. Compiled and edited by M.L. DOSA and J. COLLIN. - The Hague, Paris: FID and Unesco, 1984, 187 p.

SARACEVIC, T. - A course in information consolidation. A Handbook for education and training in analysis, synthesis and repackaging of information (preliminary version). - Paris: Unesco, 1986. - 128 p. (PGI-86/WS/14). English only

SAUNDERS, W.L. - Guidelines for curriculum development in information studies. - Paris: Unesco, 1978. - 38 p. (PGI-78/WS/27). Also available in French and Spanish

SAVARD, R. - Principes directeurs pour l'enseignement du marketing dans la formation des bibliothécaires, documentalistes et archivistes. - Paris: Unesco, 1988. - 128 p. (PGI-88/WS/1). English and Spanish versions in preparation.

SIMMONS, P. - Teaching package on the use of information handling standards: computer aspects of bibliographic records, computer hardware, computer software (Preliminary version). - Paris: Unesco, 1986. (PGI-86/WS/4). Various pagings. Further modules to be issued later.

THOMPSON, A.H. - Guide to the production and use of audio-visual aids in library and information science teaching. - Paris: Unesco, 1983. - 125 p. (PGI-83/WS/17). Also available in French and Spanish

VAN PATTEN DE OCAMPO, E.M.. - La integracion de la biblioteca escolar/centro de recursos de aprendizaje al curriculum de las escuelas. Programa de capacitacion para su uso en las escuelas formadoras de maestros. - ocho Modulos. 27, 19, 18, 40, 34, 33, 40, 23 p. - Unesco: Caracas, 1987. (PGI/LAC-87/WS/2). Available from Unesco Caracas Office. Spanish only

VAUGHAN, A. - Reader on management. To be issued in 1988. French and Spanish versions in preparation.

WASSERMAN, P., RIZZO, J.R. - A Course in administration for managers of information services: design, implementation and topical outline. - Paris: Unesco, 1977. - 79 p. (SC-76/WS/110). Also available in French

WATSON, D.G. - Guidelines for the organization of short courses and workshops on the dissemination of data in science and technology. - Paris: Unesco, 1986. - 73 p. (PGI-86/WS/11). Also available in French and Spanish

WHITE, B. - Directory of audio-visual materials for use in records management and archives administration training. - Paris: Unesco, 1982. - 71 p. (PGI-82/WS/8). English only

WILSON, T.D. - Guidelines for developing and implementing a national plan for training and education in information use. - Paris: Unesco, 1980. - 50 p. (PGI-80/WS/28). Also available in French and Spanish

WOOD, F.E. - Guidelines for teachers of online information retrieval. - Paris: Unesco, 1988. - 81 p. (PGI-88/WS/7). French and Spanish versions in preparation.

WORLD Guide to library schools and training courses in documentation / Guide mondial des écoles de bibliothécaires et de documentalistes. - Second edition. - London: Clive Bingley; Paris: The Unesco Press, 1981. - 549 p. (ISBN 0-85157-309-6). Out of print

Copies of the above studies and documents are available from:
Division of the General, Information Programme, UNESCO, 7, Place de Fontenoy, 75007 PARIS, France

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